

# SEARCH REQUEST FORM

116564

Requestor's Name: Irene Marx Serial Number: 10/077223  
Date: 3/11/04 Phone: 20919 Art Unit: 1651

3E71

## Search Topic:

Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevant citations, authors, keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevant claim(s).

Please search  
- Inventions  
(claims 1-3, 819 elected)  
- composition of 20 or more Krebs cycle  
(citric acid cycle) intermediates  
- 2 or more compounds of cl. 3.  
- cl 3 products; + products of cl. 8  
- composition as tablet, injection,  
infusion, inhalant, suppository, etc.

## STAFF USE ONLY

Date completed: 3/14/04  
Searcher: u  
Terminal time: \_\_\_\_\_  
Elapsed time: 10 + 100  
CPU time: \_\_\_\_\_  
Total time: \_\_\_\_\_  
Number of Searches: \_\_\_\_\_  
Number of Databases: \_\_\_\_\_

Search Site  
☒ STIC  
☐ CM-1  
☐ Pre-S  
Type of Search  
☐ N.A. Sequence  
☐ A.A. Sequence  
☐ Structure  
☒ Bibliographic

Vendors  
☐ IG  
☒ STN  
☐ Dialog  
☐ APS  
☐ Geninfo  
☐ SDC  
☐ DARC/Questel  
☐ Other



# **STIC Search Report**

## **Biotech-Chem Library**

STIC Database Tracking Number: 116686

TO: Irene Marx  
Location: 3a79  
Sunday, March 14, 2004 *3E71*  
Art Unit: 1651  
Phone: 272-0919  
Serial Number: 10 / 077283

From: Jan Delaval  
Location: Biotech-Chem Library  
Rem 1A51  
Phone: 272-2504

[jan.delaval@uspto.gov](mailto:jan.delaval@uspto.gov)

### Search Notes

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 10:59:31 ON 14 MAR 2004

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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FILE COVERS 1907 - 14 Mar 2004 VOL 140 ISS 12

FILE LAST UPDATED: 12 Mar 2004 (20040312/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d his

(FILE 'HOME' ENTERED AT 09:24:04 ON 14 MAR 2004)

SET COST OFF

FILE 'HCAPLUS' ENTERED AT 09:27:01 ON 14 MAR 2004

E RATH M/AU  
L1 84 S E15-E17,E3-E7  
L2 20 S L1 AND P/DT  
E KREBS/CT  
E E7+ALL  
E E2+ALL  
L3 4758 S E3  
L4 11174 S E3-E8/BI  
L5 339 S CIS ACONITATE  
L6 272 S CIS ACONITIC ACID  
L7 357 S CIS(L)ACONITIC ACID  
L8 126392 S CITRIC ACID OR CITRATE  
L9 9135 S ISOCITRATE OR ISOCITRIC ACID  
L10 23 S OXALSUCCINATE OR OXALSUCCINIC ACID  
L11 148 S OXALSUCCINATE OR OXALOSUCCINATE OR (OXALSUCCINIC OR OXALOSUCC  
L12 10044 S (ALPHA OR ALFA) () (KETOGLUTARATE OR KETO GLUTARATE OR (KETOGLU  
L13 267 S SUCCINYL () (COE OR COENZYME OR CO ENZYME) () A  
L14 10 S SUCCINATE () (COE OR COENZYME OR CO ENZYME) () A  
L15 477 S (SUCCINATE OR SUCCINYL) (L) (COE OR COENZYME OR CO ENZYME) () A  
L16 72540 S SUCCINATE OR SUCCINIC ACID  
L17 29738 S FUMARATE OR FUMARIC ACID  
L18 2877 S L () (MALATE OR MALIC ACID)  
L19 7367 S OXALACETATE OR OXALACETIC ACID  
L20 1835 S ACETYL () (COE OR COENZYME OR CO ENZYME) () A  
L21 9566 S ACETYL COA  
L22 1140 S (SUCCINYL OR SUCCINATE) () COA  
L23 60484 S PYRUVATE OR PYRUVIC ACID

FILE 'REGISTRY' ENTERED AT 09:51:06 ON 14 MAR 2004

L24 12 S 110-15-6 OR 77-92-9 OR 585-84-2 OR 320-77-4 OR 1948-82-9 OR 3  
L25 44084 S (110-15-6 OR 77-92-9 OR 585-84-2 OR 320-77-4 OR 1948-82-9 OR  
L26 32099 S L25 NOT ((PMS OR CCS OR AYS OR MNS OR MXS OR IDS)/CI OR COMPD  
L27 32083 S L26 NOT SQL/FA

L28 2 S L24 AND NR>=1  
L29 9 S L27 AND (604-98-8 OR 72-89-9)/CRN  
L30 30372 S L27 AND NR>=1  
L31 1711 S L27 NOT L30  
L32 1720 S L29,L31

FILE 'HCAPLUS' ENTERED AT 09:54:20 ON 14 MAR 2004

L33 114420 S L24 OR L32  
L34 298526 S L3-L23,L33  
L35 2987 S LIPOIC ACID  
L36 1254 S LIPOAMIDE  
L37 0 S ACETYLLIPOAMIDE OR ACETYLIPOAMIDE OR ACETYL LIPOAMIDE  
L38 0 S LIPOAMIDE() (ACETYL OR ACETATE)  
L39 16 S LIPOAMIDE(S) (ACETYL OR ACETATE OR ACETIC ACID)  
L40 3 S L36(L)DIACET?  
L41 0 S DIACETYLLIPOAMIDE  
L42 1 S DIACETYL LIPOAMIDE  
L43 93776 S LYSINE  
L44 8921 S CARNITINE  
L45 85808 S ASCORBATE OR ASCORBIC ACID  
L46 20046 S THIAMINE  
L47 12222 S RIBOFLAVIN  
L48 19052 S NICOTINIC ACID  
L49 920 S NIACINAMIDE  
L50 8658 S PANTOTHENATE OR PANTOTHENIC ACID  
L51 5835 S NICOTINAMIDE ADENINE DINUCLEOTIDE  
L52 2268 S REDUCED NICOTINAMIDE ADENINE DINUCLEOTIDE  
L53 2221 S NICOTINAMIDE ADENINE DINUCLEOTIDE PHOSPHATE  
L54 925 S REDUCED NICOTINAMIDE ADENINE DINUCLEOTIDE PHOSPHATE  
L55 2578 S QUINOLINATE OR QUINOLINIC ACID  
L56 8784 S FLAVIN ADENINE DINUCLEOTIDE  
L57 3 S REDUCED FLAVIN ADENINE DINUCLEOTIDE  
L58 12 S REDUCED FLAVIN MONONUCLEOTIDE  
L59 3297 S ADENOSINE DIPHOSPHATE  
L60 13839 S ADENOSINE TRIPHOSPHATE  
L61 496 S GUANOSINE DIPHOSPHATE  
L62 1560 S GUANOSINE TRIPHOSPHATE  
L63 39884 S (MG OR MAGNESIUM OR CA OR CALCIUM OR MN OR MANGANESE)() ION  
L64 38 S (CU OR COPPER)() (FE OR IRON)() (SULFATE OR SULPHATE OR SO4)  
L65 10486 S (CU OR COPPER OR CUPR?) (L) (FE OR FE2 OR FERRIC OR FERROUS OR  
L66 562296 S MOLYBDENUM OR MO

FILE 'REGISTRY' ENTERED AT 10:19:04 ON 14 MAR 2004

L67 22 S 89-00-4 OR 146-14-5 OR 146-17-8 OR 5666-16-0 OR 58-64-0 OR 56  
L68 23 S 89-00-9 OR 146-14-5 OR 146-17-8 OR 5666-16-0 OR 58-64-0 OR 56  
L69 8 S 62624-30-0 OR 10504-35-5 OR 37138-77-5 OR 53-84-9 OR 53-59-8  
L70 2 S 10028-22-5 OR 7758-98-7  
L71 22612 S 7664-93-9/CRN  
L72 396 S L71 AND CU/ELS  
L73 430 S L71 AND FE/ELS  
L74 29 S L72 AND L73  
L75 14 S L74 NOT AYS/CI  
L76 5 S L75 NOT MXS/CI  
L77 2 S L76 NOT (GRAPHITE OR MNS/CI)  
L78 522 S L72,L73 NOT (AYS OR MXS OR MNS OR CCS)/CI  
L79 81 S L78 AND 2/NC  
L80 21 S L79 AND SALT  
L81 18 S L80 NOT (59FE OR 55FE OR N/ELS)  
L82 31 S L67-L69  
SEL RN  
L83 5357 S E1-E31/CRN  
L84 852 S L83 NOT ((AYS OR PMS OR MXS OR MNS OR CCS OR IDS)/CI OR COMPD  
L85 903 S L70,L77,L81,L82,L84

L86 418 S (MG OR CA OR MN OR MO)/MF  
L87 115 S L86 NOT ISOTOPE  
L88 1018 S L85,L87

FILE 'HCAPLUS' ENTERED AT 10:28:29 ON 14 MAR 2004

L89 943555 S L88

FILE 'REGISTRY' ENTERED AT 10:28:59 ON 14 MAR 2004

L90 1 S 940-69-2  
L91 773 S S2C3/ES AND 1/NR AND (O AND N)/ELS  
L92 111 S L91 AND ACET  
L93 55 S L92 AND 1/NC  
L94 35 S L93 NOT CCS/CI  
L95 56 S L92 NOT L93  
L96 33 S L95 NOT MXS/CI  
L97 11 S L96 NOT RU/ELS  
L98 4 S 940-69-2/CRN  
L99 731 S L91 NOT RU/ELS  
L100 666 S L99 NOT MXS/CI  
L101 664 S L100 NOT CCS/CI  
L102 70 S L101 AND ?ACET?/CNS  
L103 47 S L102 AND 2/S  
L104 23 S L103 AND 1/N  
L105 1 S L104 AND C10H17NO2S2  
L106 0 S 214554-83-3/CRN

FILE 'HCAPLUS' ENTERED AT 10:34:27 ON 14 MAR 2004

L107 2 S L105  
L108 943555 S L89,L107  
L109 52269 S L35-L66,L108 AND L34  
L110 4 S L1 AND L109  
L111 52423 S L34 AND (L35-L66,L108 OR ASCORB?)  
L112 52423 S L109,L111  
L113 4 S L1 AND L112  
L114 4 S L110,L113  
L115 2405 S L112 AND (L24 OR L32) (L) (THU OR BAC OR DMA OR PAC OR PKT)/RL  
L116 1860 S L115 AND (L88 OR L105) (L) (THU OR BAC OR DMA OR PAC OR PKT)/R  
L117 1249 S L116 AND (PHARMACEUT? OR PHARMACOL?)/SC,SX  
L118 674 S L117 AND COMPOSITION  
L119 683 S L117 AND (COMBIN? OR MIX? OR SYNERG? OR FORMUL?)  
L120 972 S L118,L119  
L121 761 S L120 AND (PD<=20010214 OR PRD<=20010214 OR AD<=20010214)  
L122 1 S L121 AND (BIOENERG? OR BIO(L) ENERG?)  
L123 5 S L114,L122  
E RATH/PA,CS  
L124 4 S E24-E30  
L125 3 S L124 NOT RATH/TI  
L126 7 S L123,L125  
E ENERGY/CT  
L127 4 S L121 AND ENERGY/CW  
E ENERGY METABOLISM/CT  
E E4+ALL  
L128 7453 S E3,E2  
E E7+ALL  
L129 1653 S E1  
L130 675742 S E3+NT  
L131 199805 S E7+NT  
L132 21 S L121 AND L128-L131  
L133 29 S L126,L127,L132  
L134 22 S L133 NOT L126  
E UREA CYCLE/CT  
E E3+ALL  
L135 627 S E2

L136 1 S L135 AND L121  
E METABOLISM/CT  
E E13+ALL  
L137 19 S E2,E1+NT AND L121  
E METABOLISM/CT  
E E3+ALL  
L138 15 S E1+NT AND L121  
L139 25 S L137,L138  
L140 21 S L139 NOT L133  
SEL DN AN 1 3 12 13 17 18  
L141 6 S E1-E16  
L142 13 S L126,L141  
L143 13 S L142 AND L1-L23,L33-L66,L89,L107-L142  
L144 10 S L143 AND (KREB OR ?SUCCIN? OR ?FUMAR? OR ?MALIC? OR ?MALATE?  
L145 13 S L143,L144

FILE 'HCAPLUS' ENTERED AT 10:59:31 ON 14 MAR 2004

=> d all hitstr tot l145

L145 ANSWER 1 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2004:182238 HCAPLUS  
ED Entered STN: 05 Mar 2004  
TI Metabolic uncoupling therapy  
IN McCleary, Edward Larry  
PA USA  
SO U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S. Ser. No. 749,584.  
CODEN: USXXCO  
DT Patent  
LA English  
IC ICM A61K031-7076  
ICS A61K031-685; A61K031-525; A61K031-195; A61K031-198  
NCL 424094100; 514046000; 514251000; 514078000; 514356000; 514393000;  
514561000; 514350000; 514565000; 514250000  
CC 1-12 (Pharmacology)  
Section cross-reference(s): 2, 18  
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004043013	A1	20040304	US 2003-462958	20030617 <--
	US 2002132219	A1	20020919	US 2000-749584	20001228 <--
	US 6579866	B2	20030617		
PRAI	US 2000-749584	A2	20001228	<--	

AB A **combination** of chemical agents reduces reductive stress by limiting the accumulation of high-energy electrons potentially available to the electron transport chain. A method of metabolic uncoupling therapy (MUT) comprises: analyzing a specific physiol. process involving reductive stress; identifying a plurality of MUT agents that modulate metabolic pathways by influencing electron flux; and **formulating a combination** of MUT agents that limits the accumulation of high-energy electrons potentially available to the electron transport chain.

ST metabolic uncoupling therapy electron transport vitamin  
IT Amino acids

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(branched; metabolic uncoupling therapy)

IT **Metabolism, animal**

(high-energy electrons in; metabolic uncoupling therapy)

IT Antibiotics

Electron transport system, biological

**Metabolic pathways**

(metabolic uncoupling therapy)

IT Vitamins  
 RL: FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (metabolic uncoupling therapy)

IT Albumins  
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (metabolic uncoupling therapy)

IT Phosphatidylcholines  
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (metabolic uncoupling therapy)

IT Sphingomyelins  
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (metabolic uncoupling therapy)

IT Phenols  
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (polyphenols, nonpolymeric; metabolic uncoupling therapy)

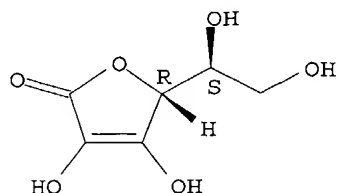
IT Drug interactions  
 (synergistic; metabolic uncoupling therapy)

IT 50-69-1, Ribose 50-81-7, vitamin C 50-99-7, Glucose 51-84-3, Acetylcholine 54-47-7, Pyridoxal phosphate 56-40-6, Glycine 56-41-7, L-Alanine 56-45-1, L-Serine 56-84-8, Aspartic acid 56-85-9, Glutamine 57-00-1, Creatine 58-85-5, Biotin 59-30-3 59-43-8, vitamin B1 62-49-7, Choline 65-23-6, Pyridoxine 68-19-9, vitamin B12 70-51-9 74-79-3, Arginine 79-83-4, vitamin B3 83-88-5, Riboflavin 87-89-8, (myo)Inositol 98-92-0, vitamin B3 107-35-7, Taurine 107-43-7, Trimethylglycine 127-17-3 144-23-0, Magnesium citrate 144-55-8, Carbonic acid monosodium salt 303-98-0, coenzyme Q10 541-15-1, Carnitine 541-50-4 563-24-6 1406-16-2, vitamin D 1406-18-4, vitamin E 3040-38-8, Acetyl-L-carnitine 6829-55-6D, Tocotrienol, analogs 7439-95-4, Magnesium 7440-09-7, Potassium 7440-47-3, Chromium 7440-70-2, Calcium 7647-14-5, Sodium chloride 7782-49-2, Selenium 8059-24-3, vitamin B6 9004-10-8, Insulin 17298-37-2, Propionyl carnitine 27750-10-3, Hydroxycitric acid 27774-13-6, Vanadyl sulfate 29908-03-0 32839-18-2 32839-30-8 57828-26-9, Lipoic acid 102518-79-6, Huperzine A  
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (metabolic uncoupling therapy)

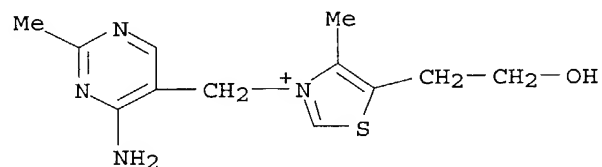
IT 50-81-7, vitamin C 59-43-8, vitamin B1 79-83-4, vitamin B3 83-88-5, Riboflavin 98-92-0, vitamin B3 127-17-3 144-23-0, Magnesium citrate 541-15-1, Carnitine 7439-95-4, Magnesium 7440-70-2, Calcium  
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (metabolic uncoupling therapy)

RN 50-81-7 HCAPLUS  
 CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



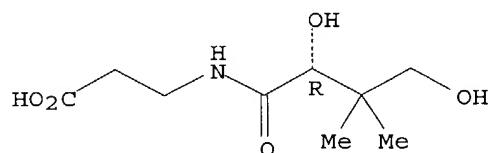
RN 59-43-8 HCAPLUS  
 CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-  
 4-methyl- chloride (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

RN 79-83-4 HCAPLUS  
 CN β-Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]- (9CI) (CA  
 INDEX NAME)

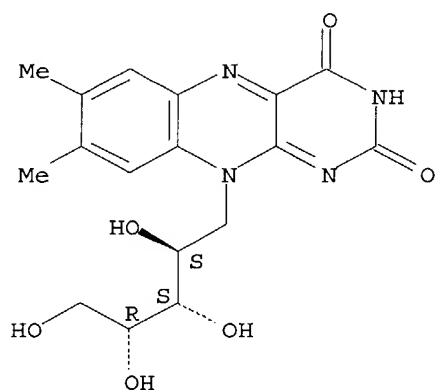
Absolute stereochemistry. Rotation (+).



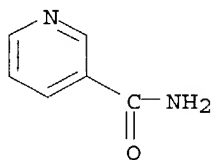
RN 83-88-5 HCAPLUS  
 CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

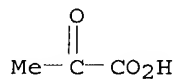




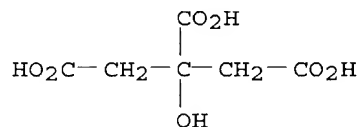
RN 98-92-0 HCAPLUS  
 CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)



RN 127-17-3 HCAPLUS  
 CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



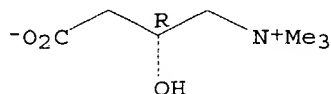
RN 144-23-0 HCAPLUS  
 CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, magnesium salt (1:1) (9CI)  
 (CA INDEX NAME)



● Mg

RN 541-15-1 HCAPLUS  
 CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-  
 (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 7439-95-4 HCAPLUS  
CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7440-70-2 HCAPLUS  
CN Calcium (8CI, 9CI) (CA INDEX NAME)

Ca

L145 ANSWER 2 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:173419 HCAPLUS  
DN 138:221848  
ED Entered STN: 07 Mar 2003  
TI Preparation of novel **ascorbic acid lysine**  
and proline derivatives  
IN Roomi, Waheed; Netke, Shrirang; Ivanov, Vadim; Niedzwiecki, Aleksandra  
PA **Rath, Matthias, USA**  
SO PCT Int. Appl., 41 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
IC ICM A61K031-34  
ICS C07D305-12  
CC 34-3 (Amino Acids, Peptides, and Proteins)  
Section cross-reference(s): 33, 62

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003018000	A1	20030306	WO 2002-US27060	20020823
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2003119753	A1	20030626	US 2002-226588	20020823
PRAI	US 2001-314857P	P	20010824		
AB	<b>L-Ascorbic acid</b> esters with <b>lysine</b> or <b>lysine</b> moieties or proline or proline moieties were prepared for use in compns. used to prevent the degradation of extracellular matrix, stabilize connective tissue, as antioxidants, and for treating damage to skin. Thus, treating 8 mmol <b>L-ascorbic acid</b> with 10 mmol <b>L-</b> <b>lysine</b> in 20 mL sulfuric acid overnight at room temperature afforded <b>L-ascorbyl-6-lysine</b> .				
ST	<b>ascorbic acid</b> ester <b>lysine</b> proline prepn				

dermatol application

IT Amino acids, preparation  
 RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (ascorbate esters; preparation of novel ascorbic acid lysinate or proline derivs.)

IT Antioxidants  
 Connective tissue  
 Extracellular matrix  
 (preparation of novel ascorbic acid lysinate or proline derivs.)

IT 25213-33-6DP, Poly[(2S)-1,2-pyrrolidinediylcarbonyl], reaction products with 6-deoxybromo ascorbate or 6-deoxyamino ascorbate  
 38000-06-5DP, reaction products with 6-deoxybromo ascorbate or 6-deoxyamino ascorbate 62983-44-2DP, reaction products with polylysine or polyproline 85366-70-7DP, reaction products with polylysine or polyproline 498576-94-6P 498576-96-8P 500893-69-6P  
 500893-70-9P 500893-71-0P 500893-72-1P 500893-73-2P 500893-74-3P  
 500893-75-4P 500893-76-5P 500893-77-6DP, reaction products with polylysine 500893-78-7DP, reaction products with polyproline  
 500893-79-8P 500893-80-1P 500893-81-2P 500893-82-3P 500893-83-4P  
 500893-84-5P 500893-85-6P 500893-86-7P 500893-87-8P 500893-88-9P  
 500893-89-0P 500893-90-3P 500893-91-4P 500893-92-5P 500893-93-6P  
 500893-94-7P 500893-95-8P 500893-96-9P 500893-97-0P 500893-98-1P  
 500893-99-2P 500894-00-8P 500894-02-0P 500894-03-1P 500894-04-2P  
 500894-05-3P 500894-06-4P 500903-96-8P 500903-97-9P 500903-98-0P  
 500903-99-1P 500904-02-9P 500904-05-2P 500904-06-3P 500904-07-4P  
 500904-08-5P 500904-09-6P 500904-10-9P  
 RL: COS (Cosmetic use); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (preparation of novel ascorbic acid lysinate or proline derivs.)

IT 50-81-7, Ascorbic acid, reactions  
 56-87-1, L Lysine, reactions 147-85-3, L Proline, reactions 15042-01-0, 5 6 Isopropylidene ascorbic acid  
 62983-44-2 85366-70-7 175446-63-6 500894-01-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of novel ascorbic acid lysinate or proline derivs.)

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD

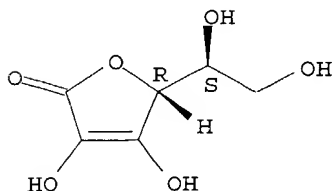
RE (1) Khaled; US 5977073 A 1999 HCAPLUS

IT 50-81-7, Ascorbic acid, reactions  
 56-87-1, L Lysine, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of novel ascorbic acid lysinate or proline derivs.)

RN 50-81-7 HCAPLUS

CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

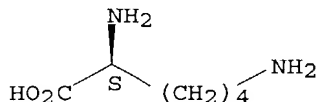
Absolute stereochemistry.



RN 56-87-1 HCAPLUS

CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L145 ANSWER 3 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:169981 HCAPLUS

DN 138:180774

ED Entered STN: 06 Mar 2003

TI **Compositions** of flavonoids and **synergists** for use as cytoprotectants and methods of making and using them

IN Brown, Lesley A.; Miller, Guy

PA Galileo Laboratories, Inc., USA

SO U.S., 28 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM A61K007-42

NCL 424059000; 424401000; 514456000; 514045000; 514046000; 514047000; 514048000; 514028000; 536026700; 536027600

CC 1-12 (**Pharmacology**)

Section cross-reference(s): 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6528042	B1	20030304	US 2000-684607	20001006 <--
PRAI	US 1999-159003P	P	19991008	<--	

AB Non-naturally-occurring **compns.** for use in amelioration of disruption of energy metabolism secondary to stress are described. These **compns.** comprise a flavonoid or derivative thereof and a **synergist**. **Synergists** include, but are not limited to, amino acids, carbohydrates, **carnitines**, flavonoids, nucleosides, and tocopherols and/or derivs. thereof. Methods of making these **compns.** and methods of ameliorating disruption of energy metabolism secondary to stress, comprising administering such **synergistic compns.**, are also disclosed.

ST flavonoid **synergist combination** cytoprotectant energy metab stress; amino acid flavonoid **combination** cytoprotectant energy metab stress; carbohydrate flavonoid **combination** cytoprotectant energy metab stress; **carnitine** flavonoid **combination** cytoprotectant energy metab stress; nucleoside flavonoid **combination** cytoprotectant energy metab stress; tocopherol flavonoid **combination** cytoprotectant energy metab stress

IT Animal cell line  
(GCL1; flavonoid-**synergist combination composition** for cytoprotectant)

IT Animal tissue culture  
(chemical insult; flavonoid-**synergist combination composition** for cytoprotectant)

IT Nucleosides, biological studies  
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(derivs.; flavonoid-**synergist combination composition** for cytoprotectant)

IT Toxicity  
(drug, stress from; flavonoid-**synergist combination**)

- composition for cytoprotectant)
- IT **Metabolism**  
(energy; flavonoid-**synergist combination composition** for cytoprotectant)
- IT Aging, animal  
Cytoprotective agents  
Cytotoxicity  
Exercise  
Stress, animal  
(flavonoid-**synergist combination composition** for cytoprotectant)
- IT Amino acids, biological studies  
Carbohydrates, biological studies  
Flavonoids  
Nucleosides, biological studies  
Tocopherols  
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(flavonoid-**synergist combination composition** for cytoprotectant)
- IT Nutrition, animal  
(nutritional **composition**; flavonoid-**synergist combination composition** for cytoprotectant)
- IT Cell death  
(reduction; flavonoid-**synergist combination composition** for cytoprotectant)
- IT Chemicals  
(stress from chemical insult; flavonoid-**synergist combination composition** for cytoprotectant)
- IT Environment  
(stress from environmental alteration; flavonoid-**synergist combination composition** for cytoprotectant)
- IT Toxins  
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)  
(stress from exposure to; flavonoid-**synergist combination composition** for cytoprotectant)
- IT Physiology, animal  
(stress from phsysiol. condition; flavonoid-**synergist combination composition** for cytoprotectant)
- IT Surgery  
(stress from pre-surgical preparation or post-surgical conditions; flavonoid-**synergist combination composition** for cytoprotectant)
- IT Chemotherapy  
Fever and Hyperthermia  
Hypothermia  
Hypoxia, animal  
Ionizing radiation  
(stress from; flavonoid-**synergist combination composition** for cytoprotectant)
- IT Drug interactions  
(**synergistic**; flavonoid-**synergist combination composition** for cytoprotectant)
- IT 56-40-6, Glycine, biological studies 56-41-7, L-Alanine, biological studies 58-61-7, Adenosine, biological studies 58-63-9, Inosine 59-02-9,  $\alpha$ -Tocopherol 59-23-4, Galactose, biological studies 117-39-5, Quercetin 119-13-1, (+)- $\delta$ -Tocopherol 127-17-3, biological studies 153-18-4, Rutin 480-40-0, Chrysin 486-66-8, Daidzein 488-69-7, Fructose-1,6-bisphosphate 491-70-3, Luteolin 491-80-5, Biochanin A 520-26-3, Hesperidin 520-27-4, Diosmin 520-33-2, Hesperetin 541-15-1, **Carnitine** 541-15-1D, **Carnitine**, derivs. 616-91-1, N-Acetylcysteine 3040-38-8, Acetylcarnitine 5556-48-9, Ribulose

7616-22-0,  $\gamma$ -Tocopherol 20762-30-5, ADP-ribose 35054-79-6,  
Hydroxybutyric acid 36687-82-8, biological studies

RL: PAC (Pharmacological activity); THU (Therapeutic  
use); BIOL (Biological study); USES (Uses)

(flavonoid-synergist combination composition  
for cytoprotectant)

RE.CNT 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

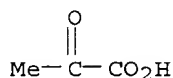
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  - (3) Bahl, J; Ann Rev Pharmacol Toxicol 1987, V27, P257 HCAPLUS
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  - (5) Bidel; US 5849786 A 1998 HCAPLUS
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  - (8) Bonnefont-Rousselot, D; Radiat Res 1999, V151, P343 HCAPLUS
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  - (30) Kuppusamy, U; Planta Med 1993, V59, P508 HCAPLUS
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  - (33) Matsugo, S; Biochem Biophys Res Comm 1997, V240, P819 HCAPLUS
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  - (35) Miller; US 5801159 A 1998 HCAPLUS
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- IT 127-17-3, biological studies 541-15-1, Carnitine

541-15-1D, Carnitine, derivs.

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(flavonoid-synergist combination composition for cytoprotectant)

RN 127-17-3 HCAPLUS

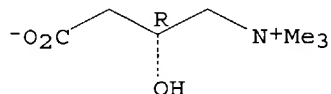
CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



RN 541-15-1 HCAPLUS

CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)- (9CI) (CA INDEX NAME)

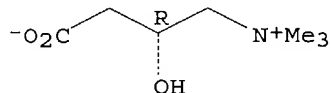
Absolute stereochemistry. Rotation (-).



RN 541-15-1 HCAPLUS

CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L145 ANSWER 4 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:5244 HCAPLUS

DN 138:49962

ED Entered STN: 03 Jan 2003

TI **Composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells

IN **Rath, Matthias**

PA USA

SO U.S. Pat. Appl. Publ., 7 pp.

CODEN: USXXCO

DT **Patent**

LA English

IC ICM A61K033-06

ICS A61K031-375; A61K031-198

NCL 424682000; 514474000; 514565000

CC 1-12 (**Pharmacology**)

Section cross-reference(s): 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003003162	A1	20030102	US 2001-885347	20010619
	US 6686340	B2	20040203		
PRAI	US 2001-885347		20010619		
AB	The invention relates to a method of administering to a human subject a				

- composition** comprising a vitamin, an amino acid and a trace element for the prevention and treatment of health conditions caused by constriction of smooth muscle cells in organs of the human body like high blood pressure, asthma, glaucoma and tinnitus. The **composition** comprises a vitamin such as **ascorbic acid**, an amino acid such as arginine, and a trace element such as magnesium.
- ST smooth muscle constriction disorder vitamin amino acid trace element;  
 IT asthma tinnitus hypertension vitamin amino acid trace element therapy  
 IT Heart, disease  
     (angina pectoris; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)
- IT Flavonoids  
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
     (citrus; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)
- IT Asthma  
 Glaucoma (disease)  
 Human  
 Hypertension  
 Muscle contraction  
     (**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)
- IT Amino acids, biological studies  
 Carotenes, biological studies  
 Trace elements, biological studies  
 Vitamins  
 RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
     (**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)
- IT Fertility  
     (disorder; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)
- IT Sexual behavior  
     (impotence; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)
- IT Drug delivery systems  
     (infusions; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)
- IT Drug delivery systems  
     (inhalants; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)
- IT Drug delivery systems  
     (injections; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)
- IT Lung, disease  
     (obstructive; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)
- IT Ovarian cycle  
     (premenstrual syndrome; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)
- IT Muscle  
     (smooth; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)
- IT Muscle, disease  
     (spasm, of ureter, urethra, stomach, gall duct; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)
- IT Drug delivery systems  
     (suppositories; **composition** and method for prevention and



treatment of health conditions caused by constriction of smooth muscle cells)

IT Drug delivery systems  
(tablets; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Ear, disease  
(tinnitus; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT Tocopherols  
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
( $\beta$ ,  $\gamma$ ,  $\delta$  **mix**; **composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT 7439-96-5D, Manganese, chelates 7440-09-7D, Potassium, chelates  
RL: PAC (Pharmacological activity); BIOL (Biological study)  
(**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT 50-81-7, L-Ascorbic acid, biological studies  
52-90-4, L-Cysteine, biological studies 56-40-6D, Glycine, chromium complexes 56-40-6D, Glycine, molybdenum complexes  
56-87-1, L-Lysine, biological studies 58-85-5, Biotin  
59-02-9, D- $\alpha$ -Tocopherol 59-30-3, Folic Acid, biological studies  
59-43-8, Thiamine, biological studies 59-67-6, Niacin, biological studies 65-23-6, Pyridoxine 67-97-0, Cholecalciferol 68-19-9, Cyanocobalamin 74-79-3, Arginine, biological studies 83-88-5, Riboflavin, biological studies  
87-89-8, Inositol 98-92-0, Niacinamide 127-40-2, Lutein 137-08-6 137-66-6, Ascorbyl Palmitate  
144-23-0, Magnesium Citrate 147-85-3, L-Proline, biological studies 303-98-0, Coenzyme Q10 432-70-2,  $\alpha$ -Carotene 472-70-8, Kryptoxanthin 541-15-1, L-Carnitine  
3211-76-5, L-Selenomethionine 5743-27-1, Calcium Ascorbate 7235-40-7,  $\beta$ -Carotene 7439-95-4, Magnesium, biological studies 7439-98-7D, Molybdenum, complexes with glycine 7440-47-3D, Chromium, complexes with glycine 7693-13-2, Calcium Citrate 7757-93-9, Dicalcium Phosphate 13479-54-4, Copper Glycinate 14281-83-5, Zinc Glycinate 14783-68-7 15431-40-0, Magnesium Ascorbate  
15595-35-4, Arginine hydrochloride 35947-07-0, Calcium Glycinate 72746-33-9,  $\zeta$ -Carotene 174882-69-0, Pycnogenol  
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

IT 7439-96-5D, Manganese, chelates  
RL: PAC (Pharmacological activity); BIOL (Biological study)  
(**composition** and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

RN 7439-96-5 HCAPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

IT 50-81-7, L-Ascorbic acid, biological studies  
56-87-1, L-Lysine, biological studies 59-43-8, Thiamine, biological studies 59-67-6, Niacin, biological studies 83-88-5, Riboflavin, biological studies  
98-92-0, Niacinamide 137-08-6 144-23-0, Magnesium Citrate 541-15-1, L-Carnitine  
5743-27-1, Calcium Ascorbate 7439-95-4,

Magnesium, biological studies 7439-98-7D, Molybdenum, complexes with glycine 7693-13-2, Calcium Citrate 15431-40-0, Magnesium Ascorbate

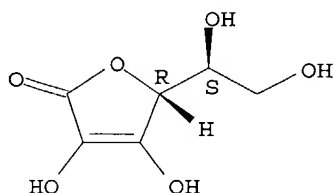
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(composition and method for prevention and treatment of health conditions caused by constriction of smooth muscle cells)

RN 50-81-7 HCAPLUS

CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

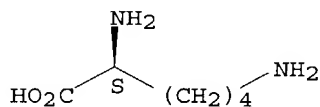
Absolute stereochemistry.



RN 56-87-1 HCAPLUS

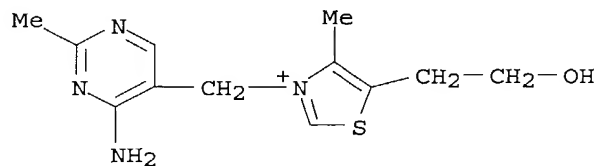
CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 59-43-8 HCAPLUS

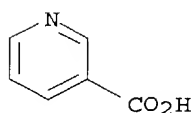
CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-4-methyl- chloride (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

RN 59-67-6 HCAPLUS

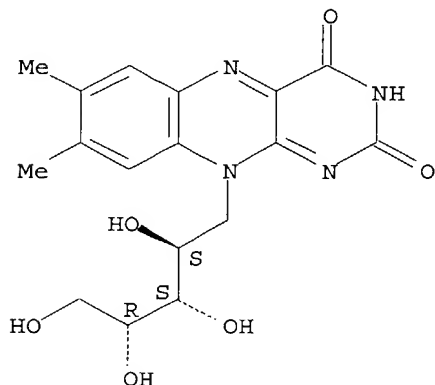
CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)



RN 83-88-5 HCAPLUS

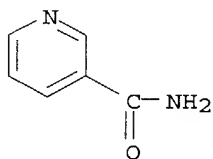
CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 98-92-0 HCAPLUS

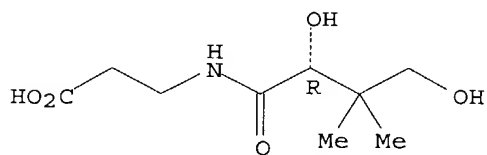
CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)



RN 137-08-6 HCAPLUS

CN  $\beta$ -Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]-, calcium salt (2:1) (9CI) (CA INDEX NAME)

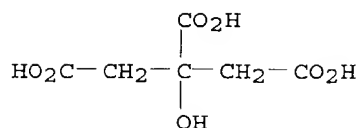
Absolute stereochemistry. Rotation (+).



● 1/2 Ca

RN 144-23-0 HCAPLUS

CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, magnesium salt (1:1) (9CI)  
(CA INDEX NAME)

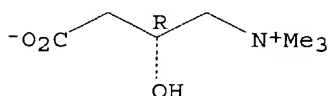


● Mg

RN 541-15-1 HCAPLUS

CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-(9CI) (CA INDEX NAME)

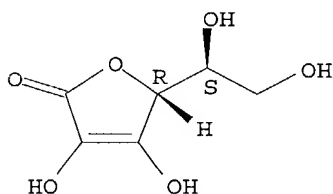
Absolute stereochemistry. Rotation (-).



RN 5743-27-1 HCAPLUS

CN L-Ascorbic acid, calcium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



● 1/2 Ca

RN 7439-95-4 HCAPLUS

CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

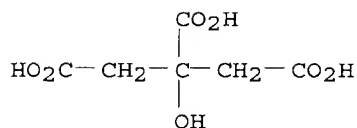
RN 7439-98-7 HCAPLUS

CN Molybdenum (8CI, 9CI) (CA INDEX NAME)

Mo

RN 7693-13-2 HCAPLUS

CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, calcium salt (9CI) (CA INDEX NAME)

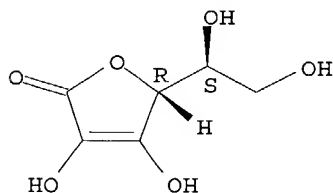


●x Ca

RN 15431-40-0 HCAPLUS

CN L-Ascorbic acid, magnesium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



●1/2 Mg

L145 ANSWER 5 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:637513 HCAPLUS

DN 137:190730

ED Entered STN: 23 Aug 2002

TI **Compositions** of therapeutic biochemical compounds involved in **bioenergy** metabolism of cellsPA **Rath, Matthias, Neth.**

SO PCT Int. Appl., 16 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM A61K031-194

ICS A61K031-122; A61K038-41; A61K031-198

CC 63-6 (**Pharmaceuticals**)

Section cross-reference(s): 1, 66

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002064129	A2	20020822	WO 2002-EP1545	20020214 <--
	WO 2002064129	A3	20030508		
	W: AE, AU, BR, CA, CN, CU, CZ, EE, HR, HU, ID, IL, IN, JP, KR, LT, LV, MK, MX, NO, NZ, PL, RO, RU, SG, SI, SK, TR, UA, ZA				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	US 2002173546	A1	20021121	US 2002-77283	20020214 <--
	BR 2002003902	A	20030128	BR 2002-3902	20020214 <--
	EP 1368017	A2	20031210	EP 2002-719835	20020214 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, TR				
	NO 2002004536	A	20020920	NO 2002-4536	20020920 <--
PRAI	US 2001-268825P	P	20010214		<--

WO 2002-EP1545 W 20020214

- AB A **composition** of biochem. compds. involved in **bioenergy** metabolism of cells and a method of use in prevention and therapy of diseases are disclosed. The **composition** may contain 2 or more of the following biochem. substances, e.g., **succinate, fumarate, L-malate,  $\alpha$ -ketoglutarate**, irresp. of their amts. for the improvement of cellular energy metabolism. These compds. may be administered at 0.001-100,000 mg.
- ST **bioenergy** metab cell biochem therapeutic
- IT **Energy metabolism, animal**  
Human  
    **Tricarboxylic acid cycle**  
    **Urea cycle**  
        (compns. of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)
- IT Drug delivery systems  
    (infusions; compns. of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)
- IT Drug delivery systems  
    (inhalants; compns. of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)
- IT Drug delivery systems  
    (injections; compns. of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)
- IT Ubiquinones  
    RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
    (reduced; compns. of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)
- IT Drug delivery systems  
    (suppositories; compns. of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)
- IT Drug delivery systems  
    (tablets; compns. of therapeutic biochem. compds. involved in **bioenergy** metabolism of cells)
- IT 50-81-7, **Ascorbic acid**, biological studies  
    53-57-6 53-59-8, **Nicotinamide-Adenine Dinucleotide Phosphate** 53-84-9,  
    **Nicotinamide-Adenine Dinucleotide**  
    56-65-5, **Adenosine Triphosphate**, biological studies 56-84-8, **L-Aspartic acid**, biological studies 56-87-1,  
    **Lysine**, biological studies 58-64-0, **Adenosine Diphosphate**, biological studies 58-68-4, **Reduced Nicotinamide Adenine Dinucleotide**  
    59-43-8, **Thiamine**, biological studies 59-67-6,  
    **Nicotinic Acid**, biological studies 70-26-8, **Ornithine** 72-89-9, **Acetyl-Coenzyme A** 74-79-3, **Arginine**, biological studies 77-92-9, **Citric acid**, biological studies 79-83-4, **Pantothenic acid** 83-88-5, **Riboflavin**, biological studies 86-01-1, **Guanosine Triphosphate** 89-00-9, **2,3-Pyridinedicarboxylic acid** 97-67-6, **L-Malic acid** 98-92-0,  
    **Niacinamide** 110-15-6, **Succinic acid**, biological studies 110-17-8, **Fumaric acid**, biological studies 127-17-3, **Pyruvic acid**, biological studies 146-14-5, **Flavin-Adenine Dinucleotide** 146-17-8, **Flavin Mononucleotide** 146-91-8, **Guanosine Diphosphate** 303-98-0, **Coenzyme Q-10** 320-77-4, **Isocitric acid** 328-42-7, **Oxalacetic acid** 328-50-7,  **$\alpha$ -Ketoglutaric acid** 372-75-8, **Citrulline** 541-15-1, **Carnitine** 585-84-2, **cis-Aconitic acid** 604-98-8,

Succinyl-Coenzyme A 940-69-2,  
 Lipoamide 1077-28-7, 1,2-Dithiolane-3-pentanoic acid  
 1948-82-9, Oxalosuccinic acid 2387-71-5  
 5666-16-0, Reduced Flavin  
 Mononucleotide 7439-95-4, Magnesium, biological studies  
 7439-96-5, Manganese, biological studies 7439-98-7,  
 Molybdenum, biological studies 7440-50-8, Copper, biological  
 studies 7440-70-2, Calcium, biological studies  
 10124-49-9, Iron-Sulfate 14875-96-8, Heme b 26598-29-8, Heme c  
 57560-10-8, Heme a 59890-88-9

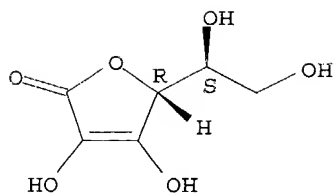
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (compns. of therapeutic biochem. compds. involved in  
 bioenergy metabolism of cells)

IT 50-81-7, Ascorbic acid, biological studies  
 53-57-6 53-59-8, Nicotinamide-Adenine  
 Dinucleotide Phosphate 53-84-9,  
 Nicotinamide-Adenine Dinucleotide  
 56-65-5, Adenosine Triphosphate, biological  
 studies 56-87-1, Lysine, biological studies  
 58-64-0, Adenosine Diphosphate, biological  
 studies 58-68-4, Reduced Nicotinamide  
 Adenine Dinucleotide 59-43-8, Thiamine  
 , biological studies 59-67-6, Nicotinic Acid  
 , biological studies 72-89-9, Acetyl-Coenzyme  
 A 77-92-9, Citric acid, biological  
 studies 79-83-4, Pantothenic acid  
 83-88-5, Riboflavin, biological studies 86-01-1  
 , Guanosine Triphosphate 89-00-9,  
 2,3-Pyridinedicarboxylic acid 97-67-6, L-Malic  
 acid 98-92-0, Niacinamide 110-15-6,  
 Succinic acid, biological studies 110-17-8,  
 Fumaric acid, biological studies 127-17-3,  
 Pyruvic acid, biological studies 146-14-5,  
 Flavin-Adenine Dinucleotide 146-17-8  
 , Flavin Mononucleotide 146-91-8, Guanosine  
 Diphosphate 320-77-4, Isocitric acid  
 328-42-7, Oxalacetic acid 328-50-7,  
 $\alpha$ -Ketoglutaric acid 541-15-1,  
 Carnitine 585-84-2, cis-Aconitic  
 acid 604-98-8, Succinyl-Coenzyme  
 A 940-69-2, Lipoamide 1948-82-9,  
 Oxalosuccinic acid 5666-16-0, Reduced  
 Flavin Mononucleotide 7439-95-4, Magnesium,  
 biological studies 7439-96-5, Manganese, biological studies  
 7439-98-7, Molybdenum, biological studies  
 7440-70-2, Calcium, biological studies 10124-49-9,  
 Iron-Sulfate  
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
 (compns. of therapeutic biochem. compds. involved in  
 bioenergy metabolism of cells)

RN 50-81-7 HCAPLUS

CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

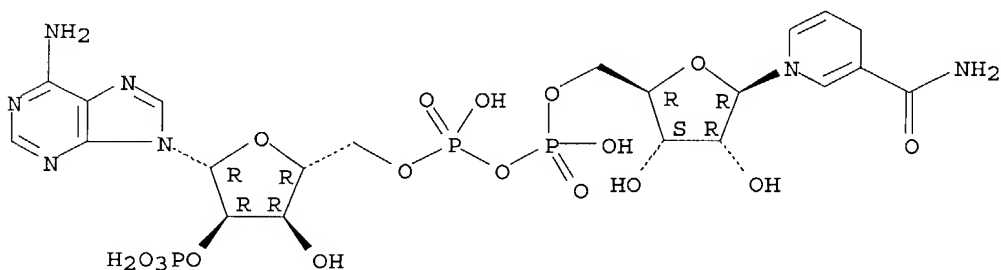
Absolute stereochemistry.



RN 53-57-6 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate), 2'-(dihydrogen phosphate),  
P'→5'-ester with 1,4-dihydro-1-β-D-ribofuranosyl-3-  
pyridinecarboxamide (9CI) (CA INDEX NAME)

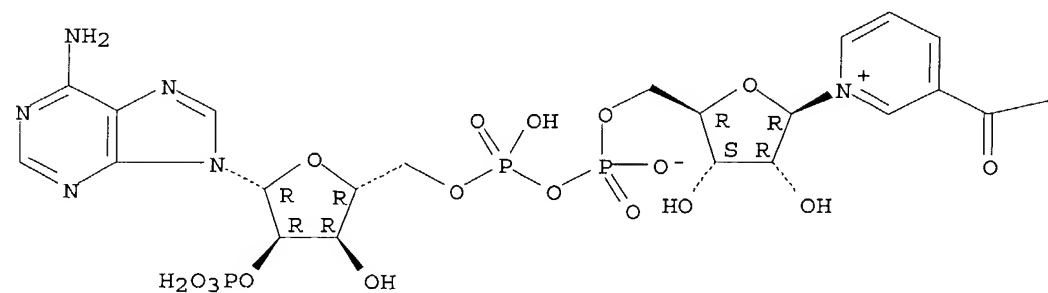
Absolute stereochemistry.



RN 53-59-8 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate), 2'-(dihydrogen phosphate),  
P'→5'-ester with 3-(aminocarbonyl)-1-β-D-  
ribofuranosylpyridinium, inner salt (9CI) (CA INDEX NAME)

Absolute stereochemistry.



PAGE 1-A

PAGE 1-B

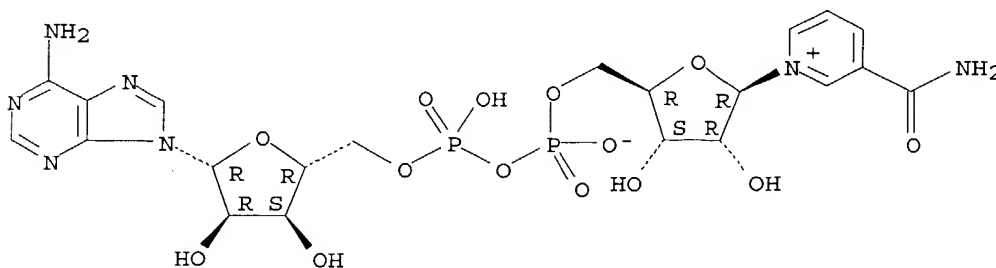
—NH<sub>2</sub>

RN 53-84-9 HCAPLUS



CN Adenosine 5'-(trihydrogen diphosphate), P'→5'-ester with  
3-(aminocarbonyl)-1-β-D-ribofuranosylpyridinium, inner salt (9CI)  
(CA INDEX NAME)

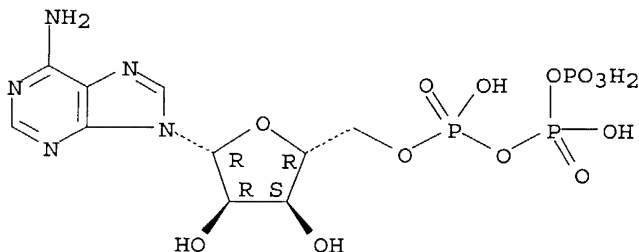
Absolute stereochemistry.



RN 56-65-5 HCAPLUS

CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

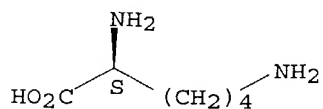
Absolute stereochemistry.



RN 56-87-1 HCAPLUS

CN L-Lysine (9CI) (CA INDEX NAME)

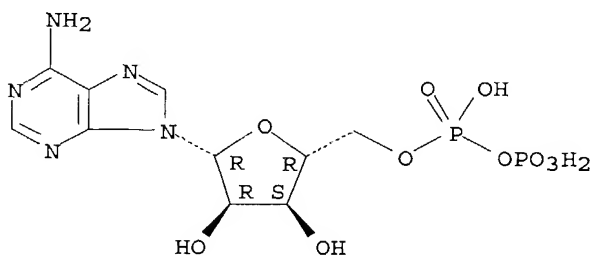
Absolute stereochemistry.



RN 58-64-0 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

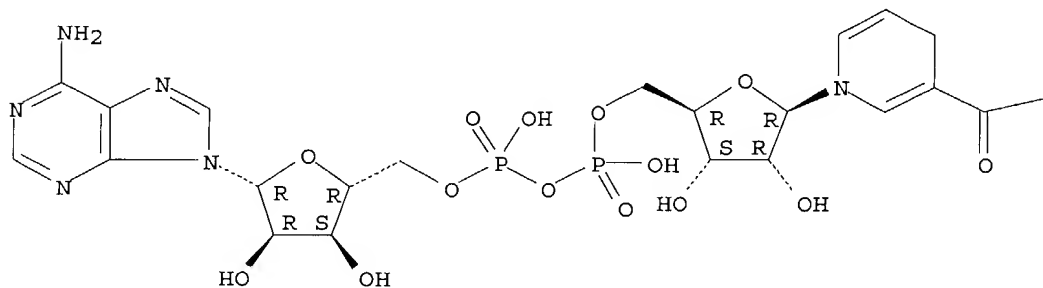
Absolute stereochemistry.



RN 58-68-4 HCAPLUS  
 CN Adenosine 5'-(trihydrogen diphosphate), P'→5'-ester with  
 1,4-dihydro-1-β-D-ribofuranosyl-3-pyridinecarboxamide (9CI) (CA  
 INDEX NAME)

Absolute stereochemistry.

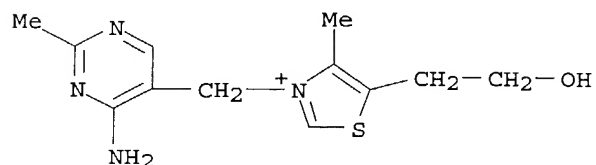
PAGE 1-A



PAGE 1-B

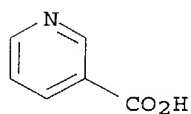
—NH<sub>2</sub>

RN 59-43-8 HCAPLUS  
 CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-  
 4-methyl- chloride (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

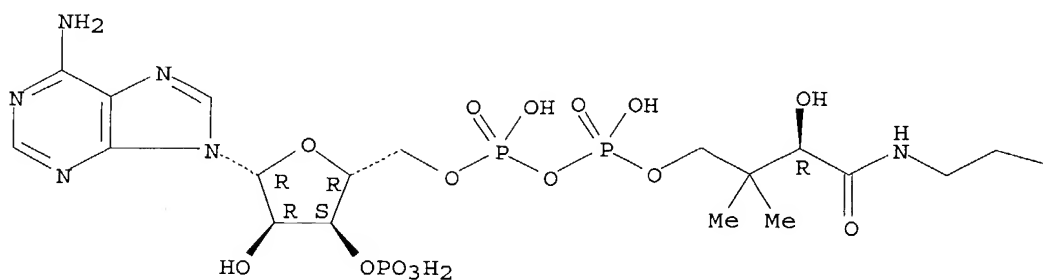
RN 59-67-6 HCAPLUS  
 CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)



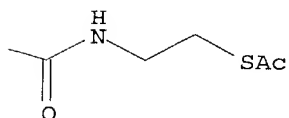
RN 72-89-9 HCAPLUS  
 CN Coenzyme A, S-acetate (6CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

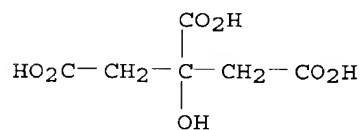


PAGE 1-B



RN 77-92-9 HCAPLUS

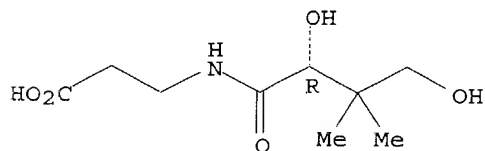
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy- (9CI) (CA INDEX NAME)



RN 79-83-4 HCAPLUS

CN  $\beta$ -Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]- (9CI) (CA INDEX NAME)

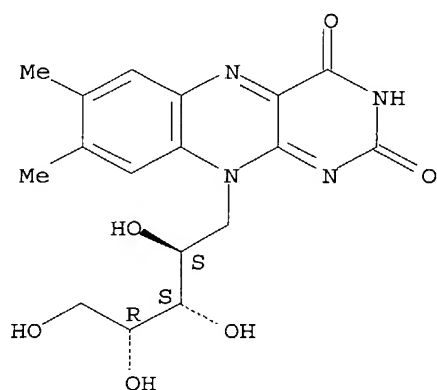
Absolute stereochemistry. Rotation (+).



RN 83-88-5 HCAPLUS

CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

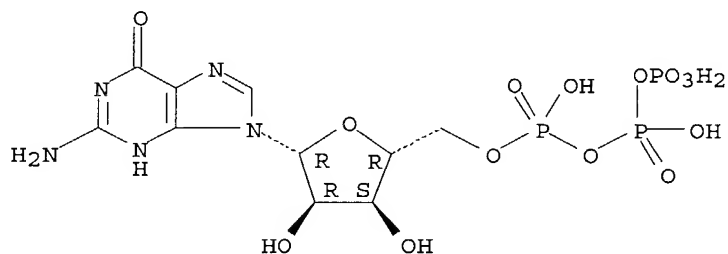
Absolute stereochemistry.



RN 86-01-1 HCAPLUS

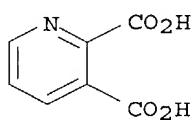
CN Guanosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 89-00-9 HCAPLUS

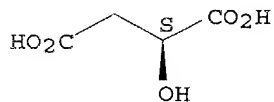
CN 2,3-Pyridinedicarboxylic acid (8CI, 9CI) (CA INDEX NAME)



RN 97-67-6 HCAPLUS

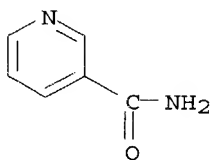
CN Butanedioic acid, hydroxy-, (2S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

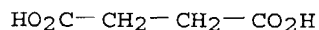


RN 98-92-0 HCAPLUS

CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)

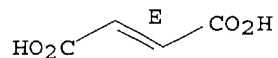


RN 110-15-6 HCAPLUS  
CN Butanedioic acid (9CI) (CA INDEX NAME)

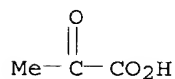


RN 110-17-8 HCAPLUS  
CN 2-Butenedioic acid (2E) - (9CI) (CA INDEX NAME)

Double bond geometry as shown.

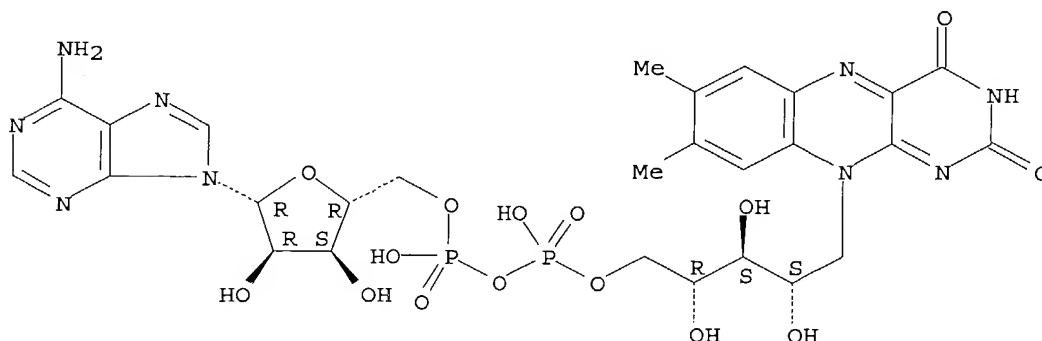


RN 127-17-3 HCAPLUS  
CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



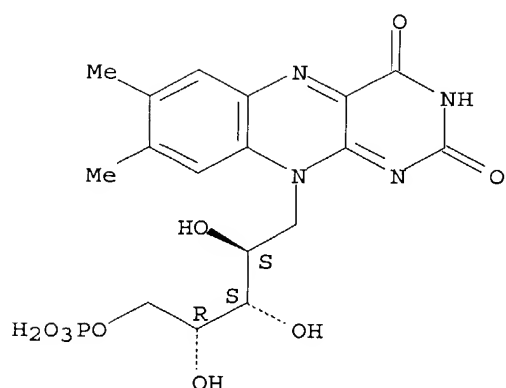
RN 146-14-5 HCAPLUS  
CN Riboflavin 5'-(trihydrogen diphosphate), P'→5'-ester with adenosine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



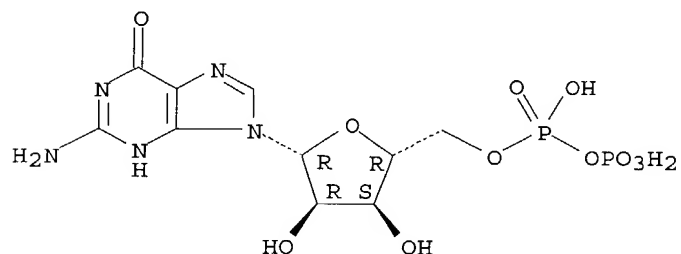
RN 146-17-8 HCAPLUS  
CN Riboflavin 5'-(dihydrogen phosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

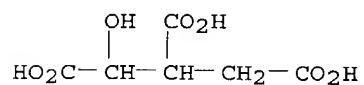


RN 146-91-8 HCAPLUS  
 CN Guanosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

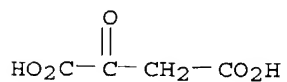
Absolute stereochemistry.



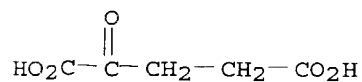
RN 320-77-4 HCAPLUS  
 CN Pentaric acid, 3-carboxy-2,3-dideoxy- (9CI) (CA INDEX NAME)



RN 328-42-7 HCAPLUS  
 CN Butanedioic acid, oxo- (9CI) (CA INDEX NAME)



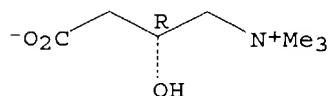
RN 328-50-7 HCAPLUS  
 CN Pentanedioic acid, 2-oxo- (9CI) (CA INDEX NAME)



RN 541-15-1 HCAPLUS

CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-  
(9CI) (CA INDEX NAME)

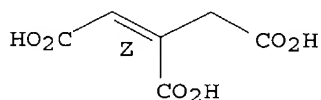
Absolute stereochemistry. Rotation (-).



RN 585-84-2 HCAPLUS

CN 1-Propene-1,2,3-tricarboxylic acid, (1Z)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

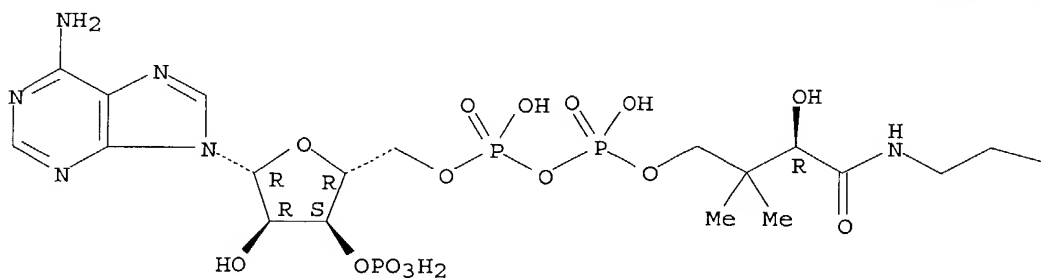


RN 604-98-8 HCAPLUS

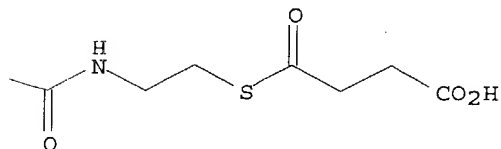
CN Coenzyme A, S-(hydrogen butanedioate) (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A

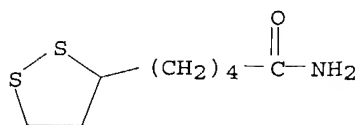


PAGE 1-B



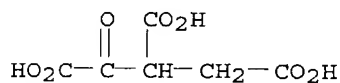
RN 940-69-2 HCAPLUS

CN 1,2-Dithiolane-3-pentanamide (9CI) (CA INDEX NAME)



RN 1948-82-9 HCAPLUS

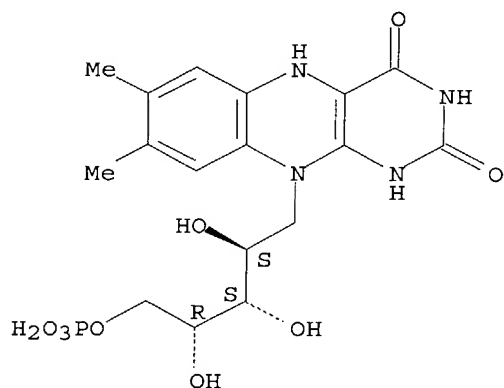
CN 1,2,3-Propanetricarboxylic acid, 1-oxo- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 5666-16-0 HCAPLUS

CN Riboflavin 5'-(dihydrogen phosphate), 1,5-dihydro- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 7439-95-4 HCAPLUS

CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

RN 7439-96-5 HCAPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7439-98-7 HCAPLUS

CN Molybdenum (8CI, 9CI) (CA INDEX NAME)

Mo

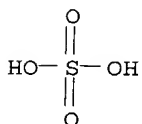
RN 7440-70-2 HCAPLUS

CN Calcium (8CI, 9CI) (CA INDEX NAME)



Ca

RN 10124-49-9 HCAPLUS  
 CN Sulfuric acid, iron salt (8CI, 9CI) (CA INDEX NAME)



●x Fe(x)

L145 ANSWER 6 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2002:552171 HCAPLUS  
 DN 137:99036  
 ED Entered STN: 25 Jul 2002  
 TI Synergistic compositions containing **ascorbate** and **lysine**  
 for the treatment of extracellular matrix degeneration  
 PA **Rath, Matthias, Neth.**  
 SO Ger. Offen., 10 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 IC ICM A61K031-375  
 ICS A61K031-198  
 CC 63-6 (Pharmaceuticals)  
 Section cross-reference(s): 1  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10101522	A1	20020725	DE 2001-10101522	20010115
PRAI	DE 2001-10101522		20010115		

AB The invention concerns synergistic pharmaceutical compns. that contain **ascorbate** and fibrinolysis/collagenase inhibitors from the group of **lysine** and its analogs for the prevention and treatment of extracellular matrix degeneration. The compns. further contain antioxidants. Thus typical oral compns. contain (mg/kgBw/d) and (IU/kgBw/d) resp.: **ascorbate** 5-500; EACA 1-1500; tranexamic acid 1-500; p-aminomethyl benzoic acid 1-500; **lysine** 1-1500; proline 1-1500; n-acetyl cysteine 0.1-5000; carotene 0.1-10 000; tocopherol 0.1-500.

ST synergism drug **ascorbate lysine** extracellular matrix degeneration

IT Extracellular matrix  
 (degeneration; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT Drug delivery systems  
 (oral; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT Drug delivery systems  
 (parenterals; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT Fibrinolysis  
 (prevention of; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT Cooperative phenomena  
(synergism; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT Atherosclerosis  
Neoplasm  
(synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT Tocopherols  
Trace elements, biological studies  
Vitamins  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT 9001-12-1, Collagenase  
RL: BSU (Biological study, unclassified); BIOL (Biological study)  
(inhibitors; synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

IT 50-81-7, **Ascorbic acid**, biological studies  
56-87-1, **L-Lysine**, biological studies 56-91-7,  
p-Aminomethyl benzoic acid 60-32-2, EACA 147-85-3, L-Proline,  
biological studies 616-91-1, L-Cysteine, N-acetyl- 701-54-2,  
Cyclohexanecarboxylic acid, 4-(aminomethyl)- 1197-18-8, Tranexamic acid  
2393-24-0, p-Benzylamine sulfonic acid 6072-02-2, **L-Lysine**,  
N2-acetyl-, methyl ester 7782-49-2, Selenium, biological studies  
23288-49-5, Probutol 24306-54-5, 4-Aminomethyl-bicyclo-2,2,2-octane-1-  
carboxylic acid  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

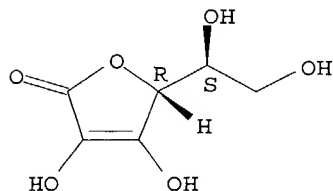
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE  
(1) Anon; DE 4243363 A1 HCAPLUS  
(2) Anon; JP 4243825 A  
(3) Anon; US 5639787 A HCAPLUS  
(4) Anon; JP 62048622 A HCAPLUS  
(5) Anon; JP 6256184 A  
(6) Anon; JARC Sci Publ 1982, V41, P665

IT 50-81-7, **Ascorbic acid**, biological studies  
56-87-1, **L-Lysine**, biological studies  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(synergistic compns. containing **ascorbate** and **lysine** for treatment of extracellular matrix degeneration)

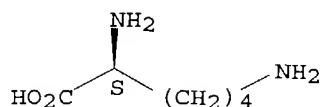
RN 50-81-7 HCAPLUS  
CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 56-87-1 HCAPLUS  
CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L145 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:272794 HCAPLUS

DN 136:299725

ED Entered STN: 12 Apr 2002

TI Therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer

IN Rath, Matthias

PA Neth.

SO Eur. Pat. Appl., 12 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM A61K031-195

ICS A61K031-375; A61P035-00

ICI A61K031-195, A61K031-375

CC 63-6 (Pharmaceuticals)

Section cross-reference(s): 1

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1195159	A1	20020410	EP 2000-121950	20001009 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI	EP 2000-121950		20001009	<--	
AB	A therapeutic composition for the prevention and treatment of different forms of cancer in very elevated dosages of <b>ascorbic acid</b> and salts, L- <b>Lysine</b> and L-proline, vitamins and trace elements.				
ST	therapeutic combination <b>ascorbate lysine</b> antitumor; arginine <b>ascorbate</b> antitumor therapeutic combination				
IT	Flavonoids RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses) (biflavonoids; therapeutic combination of <b>ascorbate</b> with <b>lysine</b> or arginine for prevention and treatment of cancer)				
IT	Uterus, neoplasm (cervix, inhibitors; therapeutic combination of <b>ascorbate</b> with <b>lysine</b> or arginine for prevention and treatment of cancer)				
IT	Antitumor agents (cervix; therapeutic combination of <b>ascorbate</b> with <b>lysine</b> or arginine for prevention and treatment of cancer)				
IT	Intestine, neoplasm (duodenum, inhibitors; therapeutic combination of <b>ascorbate</b> with <b>lysine</b> or arginine for prevention and treatment of cancer)				
IT	Antitumor agents (duodenum; therapeutic combination of <b>ascorbate</b> with <b>lysine</b> or arginine for prevention and treatment of cancer)				
IT	Antitumor agents (esophagus; therapeutic combination of <b>ascorbate</b> with <b>lysine</b> or arginine for prevention and treatment of cancer)				

- cancer)
- IT Drug delivery systems
  - (inhalants; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Lung, neoplasm
- Ovary, neoplasm
- Skin, neoplasm
- Stomach, neoplasm
- Testis, neoplasm
  - (inhibitors; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Drug delivery systems
  - (injections; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Antitumor agents
  - (lung; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Antitumor agents
  - (mammary gland; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Antitumor agents
  - (melanoma; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Esophagus
- Mammary gland
  - (neoplasm, inhibitors; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Antitumor agents
  - (ovary; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Antitumor agents
  - (skin; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Antitumor agents
  - (small intestine; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Intestine, neoplasm
  - (small, inhibitors; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Antitumor agents
  - (stomach; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Drug delivery systems
  - (suppositories; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Drug delivery systems
  - (tablets; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Antitumor agents
  - (testis; therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)
- IT Carotenes, biological studies
- Trace elements, biological studies
- Vitamins

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)

IT 50-81-7, **Ascorbic acid**, biological studies  
 56-40-6D, Glycine, chromium and **molybdenum** complexes  
 56-87-1, L-**Lysine**, biological studies 58-56-0,  
 Pyridoxine hydrochloride 58-85-5, Biotin 59-02-9, D- $\alpha$ -  
 Tocopherol 59-30-3, Folic acid, biological studies 59-67-6,  
 Niacin, biological studies 67-03-8, **Thiamine** hydrochloride  
 67-97-0, Cholecalciferol 68-19-9, Cyanocobalamin 83-88-5,  
**Riboflavin**, biological studies 87-89-8, Inositol 98-92-0  
 , **Niacinamide** 119-13-1,  $\delta$ -Tocopherol 127-40-2, Lutein  
 137-08-6 137-66-6, **Ascorbyl** Palmitate 147-85-3,  
 L-Proline, biological studies 148-03-8,  $\beta$ -Tocopherol 303-98-0,  
 Coenzyme Q10 432-70-2,  $\alpha$ -Carotene 472-70-8, Kryptoxanthin  
 541-15-1, L-**Carnitine** 657-27-2, L-  
**Lysine** hydrochloride 1119-34-2, L-Arginine hydrochloride  
 3211-76-5, L-Selenomethionine 5743-27-1, Calcium  
**Ascorbate** 7048-04-6, L-Cysteine hydrochloride monohydrate  
 7235-40-7,  $\beta$ -Carotene 7439-96-5D, Manganese, chelates  
 7439-98-7D, **Molybdenum**, glycinate complexes 7440-09-7,  
 Potassium, biological studies 7440-47-3D, Chromium, glycinate complexes  
 7616-22-0,  $\gamma$ -Tocopherol 7693-13-2, Calcium **citrate**  
 7757-93-9, Dicalcium Phosphate 7779-25-1, Magnesium  
**citrate** 13479-54-4, Copper glycinate 14281-83-5, Zinc  
 glycinate 14451-00-4, Iron **fumarate** 14783-68-7  
 15431-40-0, Magnesium **Ascorbate** 35947-07-0, Calcium  
 glycinate 174882-69-0, Pycnogenol

RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE

- (1) Bio Nutritional Health Service; GB 2268871 A 1994 HCAPLUS
- (2) Bostom, A; PHARMACOTHERAPY 1995, V15(4), P458 MEDLINE
- (3) Dioguardi, F; US 5198465 A 1993 HCAPLUS
- (4) Dzau, V; US 5891459 A 1999 HCAPLUS
- (5) Health Now Inc; EP 0891771 A 1999 HCAPLUS
- (6) Katz, E; JOURNAL OF ORTHOMOLECULAR MEDICINE 1996, V11/3, P173
- (7) Novo Med Ag; DE 3440090 A 1986 HCAPLUS
- (8) Otsuka Pharma Co Ltd; GB 2029220 A 1980 HCAPLUS
- (9) Paul, S; US 5626883 A 1997 HCAPLUS
- (10) Rath, M; US 5278189 A 1994 HCAPLUS
- (11) Rath, M; US 5650418 A 1997 HCAPLUS

IT 50-81-7, **Ascorbic acid**, biological studies  
 56-87-1, L-**Lysine**, biological studies 59-67-6,  
 Niacin, biological studies 83-88-5, **Riboflavin**,  
 biological studies 98-92-0, **Niacinamide**  
 137-08-6 541-15-1, L-**Carnitine**  
 657-27-2, L-**Lysine** hydrochloride 5743-27-1,  
 Calcium **Ascorbate** 7439-96-5D, Manganese, chelates  
 7439-98-7D, **Molybdenum**, glycinate complexes  
 7693-13-2, Calcium **citrate** 7779-25-1,  
 Magnesium **citrate** 14451-00-4, Iron **fumarate**  
 15431-40-0, Magnesium **Ascorbate**

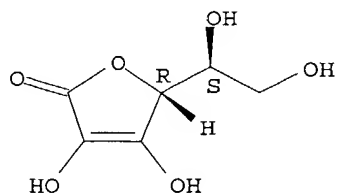
RL: PAC (Pharmacological activity); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(therapeutic combination of **ascorbate** with **lysine** or arginine for prevention and treatment of cancer)

RN 50-81-7 HCAPLUS

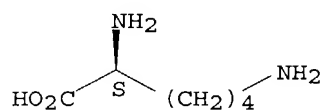
CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

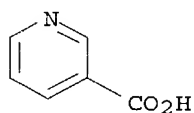


RN 56-87-1 HCAPLUS  
CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.

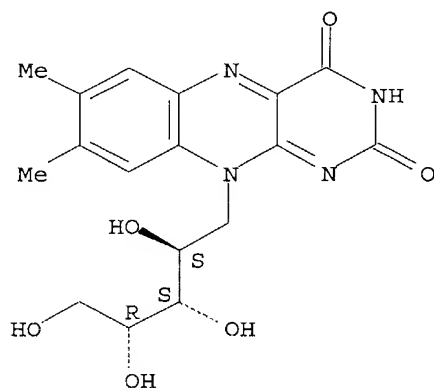


RN 59-67-6 HCAPLUS  
CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)

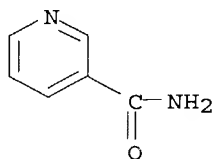


RN 83-88-5 HCAPLUS  
CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



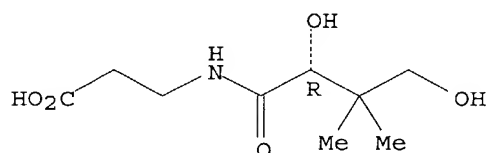
RN 98-92-0 HCAPLUS  
CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)



RN 137-08-6 HCAPLUS

CN  $\beta$ -Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]-, calcium salt (2:1) (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

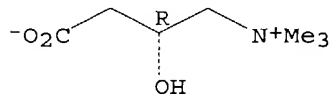


● 1/2 Ca

RN 541-15-1 HCAPLUS

CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)- (9CI) (CA INDEX NAME)

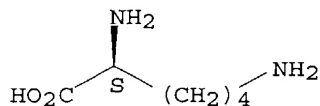
Absolute stereochemistry. Rotation (-).



RN 657-27-2 HCAPLUS

CN L-Lysine, monohydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.

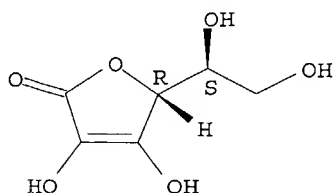


● HCl

RN 5743-27-1 HCAPLUS

CN L-Ascorbic acid, calcium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



● 1/2 Ca

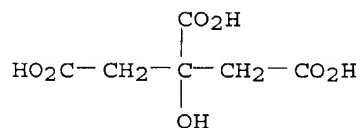
RN 7439-96-5 HCAPLUS  
CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

RN 7439-98-7 HCAPLUS  
CN Molybdenum (8CI, 9CI) (CA INDEX NAME)

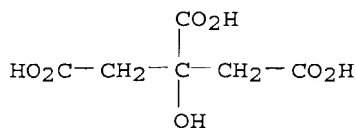
Mo

RN 7693-13-2 HCAPLUS  
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, calcium salt (9CI) (CA INDEX NAME)



● x Ca

RN 7779-25-1 HCAPLUS  
CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, magnesium salt (9CI) (CA INDEX NAME)

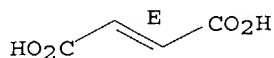


● x Mg

RN 14451-00-4 HCAPLUS  
CN 2-Butenedioic acid (2E)-, iron salt (9CI) (CA INDEX NAME)



Double bond geometry as shown.

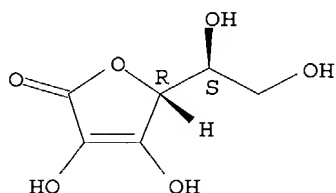


●x Fe(x)

RN 15431-40-0 HCAPLUS

CN L-Ascorbic acid, magnesium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



●1/2 Mg

L145 ANSWER 8 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:918845 HCAPLUS

DN 136:42851

ED Entered STN: 21 Dec 2001

TI **Composition** for the prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium

IN **Rath, Matthias**

PA Neth.

SO Eur. Pat. Appl., 13 pp.

CODEN: EPXXDW

DT **Patent**

LA English

IC ICM A61K031-195

ICS A61K031-375; A61K033-14; A61P009-00; A61P011-00; A61P027-00

ICI A61K031-195, A61K031-375

CC 63-6 (**Pharmaceuticals**)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1163904	A1	20011219	EP 2000-112811	20000616 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	BR 2001003256	A	20020312	BR 2001-3256	20010613 <--
	NO 2001003004	A	20011217	NO 2001-3004	20010615 <--
	ZA 2001004931	A	20011220	ZA 2001-4931	20010615 <--
	CN 1333020	A	20020130	CN 2001-124330	20010615 <--
	JP 2002047183	A2	20020212	JP 2001-181658	20010615 <--
	NZ 512402	A	20030228	NZ 2001-512402	20010615 <--
PRAI	EP 2000-112811	A	20000616 <--		
AB	The invention relates to the use of biochem. substances for a <b>composition</b> for the prevention and treatment of health conditions				

caused by constriction of smooth muscle cells in organs of the human body like high blood pressure, asthma, glaucoma and tinnitus.

- ST smooth muscle disease **compn**; **ascorbate** smooth muscle disease **compn**; arginine smooth muscle disease **compn**; magnesium compd smooth muscle disease **compn**
- IT Flavonoids  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(bioflavonoids; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)
- IT Amino acids, biological studies  
Carotenes, biological studies  
Trace elements, biological studies  
Vitamins  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(**composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)
- IT Drug delivery systems  
(infusions; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)
- IT Drug delivery systems  
(inhalants; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)
- IT Drug delivery systems  
(injections; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)
- IT Muscle, disease  
(smooth; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)
- IT Drug delivery systems  
(suppositories; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)
- IT Drug delivery systems  
(tablets; **composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)
- IT 50-81-7, **Ascorbic acid**, biological studies  
52-90-4, L-Cysteine, biological studies 56-40-6D, Glycine, complex with transition metals 56-87-1, L-Lysine, biological studies 58-85-5, Biotin 59-02-9,  $\alpha$ -Tocopherol 59-30-3, Folic acid, biological studies 59-43-8, **Thiamine**, biological studies 59-67-6, Niacin, biological studies 65-23-6, Pyridoxine 67-97-0, Cholecalciferol 68-19-9, Cyanocobalamine 74-79-3, L-Arginine, biological studies 83-88-5, **Riboflavin**, biological studies 87-89-8, Inositol 98-92-0, **Niacinamide** 119-13-1,  $\delta$ -Tocopherol 137-08-6, Calcium **pantothenate** 137-66-6, **Ascorbyl** palmitate 147-85-3, L-Proline, biological studies 148-03-8,  $\beta$ -Tocopherol 303-98-0, Coenzyme q10 541-15-1, L-Carnitine 3211-76-5, L-Selenomethionine 5743-27-1, Calcium **ascorbate** 7235-40-7,  $\beta$ -Carotene 7439-96-5D, Manganese, chelates 7439-98-7D, **Molybdenum**, complex with glycine 7440-09-7D, Potassium, chelates 7440-47-3D, Chromium, complex with glycine 7616-22-0,  $\gamma$ -Tocopherol 7693-13-2, Calcium **citrate** 7757-93-9, Dicalcium phosphate 7779-25-1, Magnesium **citrate** 13479-54-4, Copper glycinate 14281-83-5, Zinc glycinate 14783-68-7 15431-40-0, Magnesium **ascorbate** 35947-07-0, Calcium glycinate 174882-69-0, Pycnogenol  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(**composition** for prevention of smooth muscle diseases comprising **ascorbate**, arginine and magnesium)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

(1) Bio Nutritional Health Service; GB 2268871 A 1994 HCAPLUS

- (2) Bostom, A; Pharmacotherapy 1995, V15(4), P458 MEDLINE
- (3) Cooke, J; US 5891459 A 1999 HCAPLUS
- (4) Dioguardi Francesco, S; US 5198465 A 1993 HCAPLUS
- (5) Health Now Inc; EP 0891771 A 1999 HCAPLUS
- (6) Otsuka Pharma Co Ltd; GB 2029220 A 1980 HCAPLUS
- (7) Paul Stephen, M; US 5626883 A 1997 HCAPLUS
- (8) Rath, M; US 5650418 A 1997 HCAPLUS
- (9) Rath, M; Journal of Applied Nutrition 1996, V48/3(68-78)
- (10) Rath Matthias, W; US 5278189 A 1994 HCAPLUS

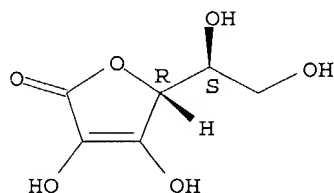
IT 50-81-7, **Ascorbic acid**, biological studies  
 56-87-1, **L-Lysine**, biological studies 59-43-8,  
**Thiamine**, biological studies 59-67-6, **Niacin**, biological  
 studies 83-88-5, **Riboflavin**, biological studies  
 98-92-0, **Niacinamide** 137-08-6, **Calcium**  
**pantothenate** 541-15-1, **L-Carnitine**  
 5743-27-1, **Calcium ascorbate** 7439-96-5D,  
 Manganese, chelates 7439-98-7D, **Molybdenum**, complex  
 with glycine 7693-13-2, **Calcium citrate**  
 7779-25-1, **Magnesium citrate** 15431-40-0,  
**Magnesium ascorbate**

RL: **THU (Therapeutic use)**; **BIOL (Biological study)**; **USES (Uses)**  
 (composition for prevention of smooth muscle diseases comprising  
**ascorbate**, arginine and magnesium)

RN 50-81-7 HCAPLUS

CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

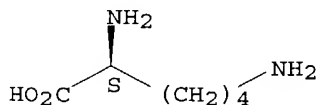
Absolute stereochemistry.



RN 56-87-1 HCAPLUS

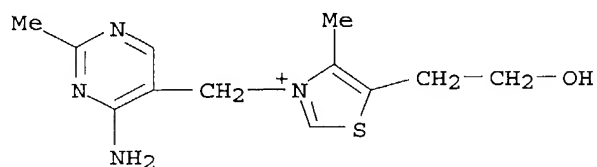
CN L-Lysine (9CI) (CA INDEX NAME)

Absolute stereochemistry.



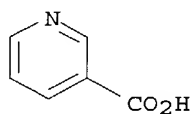
RN 59-43-8 HCAPLUS

CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-  
 4-methyl- chloride (9CI) (CA INDEX NAME)



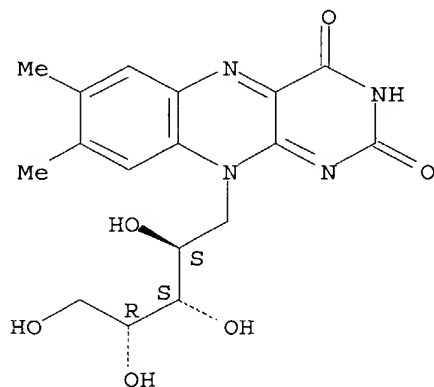
● Cl<sup>-</sup>

RN 59-67-6 HCAPLUS  
CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)

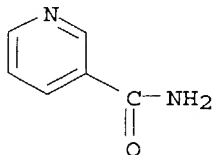


RN 83-88-5 HCAPLUS  
CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

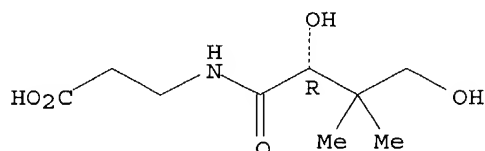


RN 98-92-0 HCAPLUS  
CN 3-Pyridinecarboxamide (9CI) (CA INDEX NAME)



RN 137-08-6 HCAPLUS  
CN β-Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]-, calcium salt (2:1) (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

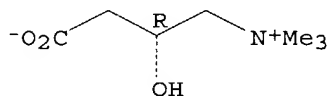


● 1/2 Ca

RN 541-15-1 HCAPLUS

CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-  
(9CI) (CA INDEX NAME)

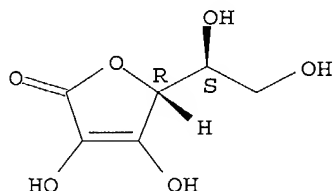
Absolute stereochemistry. Rotation (-).



RN 5743-27-1 HCAPLUS

CN L-Ascorbic acid, calcium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



● 1/2 Ca

RN 7439-96-5 HCAPLUS

CN Manganese (8CI, 9CI) (CA INDEX NAME)

Mn

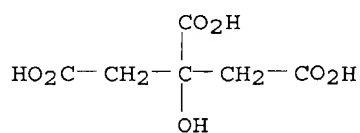
RN 7439-98-7 HCAPLUS

CN Molybdenum (8CI, 9CI) (CA INDEX NAME)

Mo

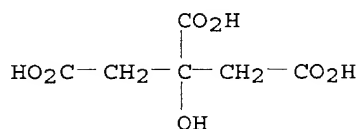
RN 7693-13-2 HCAPLUS

CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, calcium salt (9CI) (CA INDEX NAME)



●x Ca

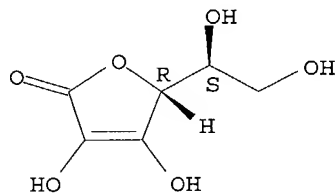
RN 7779-25-1 HCAPLUS  
 CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy-, magnesium salt (9CI) (CA INDEX NAME)



●x Mg

RN 15431-40-0 HCAPLUS  
 CN L-Ascorbic acid, magnesium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



●1/2 Mg

L145 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:429714 HCAPLUS

DN 131:266358

ED Entered STN: 13 Jul 1999

TI **Pyruvate** and **hydroxycitrate/carnitine** may synergize to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids

AU McCarty, M. F.; Gustin, J. C.

CS NutriGuard Research, Encinitas, CA, 92024, USA

SO Medical Hypotheses (1999), 52(5), 407-416

CODEN: MEHYDY; ISSN: 0306-9877

PB Churchill Livingstone

DT Journal; General Review

LA English

CC 1-0 (Pharmacology)

Section cross-reference(s): 18

- AB A review with 97 refs. containing an informal pilot trial with new data. In a recent pilot study, joint administration of **pyruvate**, **hydroxycitrate** (HCA), and **carnitine** to obese subjects was associated with a remarkable rate of body-fat loss and thermogenesis, strongly suggestive of uncoupled fatty-acid oxidation. Hepatocytes possess an uncoupling mechanism - reverse electron transport - that enables fasting ketogenesis to proceed independent of respiratory control. Electrons entering the respiratory chain at the coenzyme Q (CoQ) level via **FAD**-dependent acyl coA dehydrogenase, can be driven "up" the chain by the electrochem. proton gradient to reduce NAD<sup>+</sup>; if these electrons are then shuttled to the cytoplasm, returning to the respiratory chain at the CoQ level, the net result is heat generation at the expense of the proton gradient, enabling the uncoupled flow of electrons to oxygen. **Pyruvate's** bariatric utility may stem from its ability to catalyze the rapid transport of high-energy electrons from mitochondria to the cytoplasm, thus stimulating electron shuttle mechanisms. By enabling rapid mitochondrial uptake of fatty acids and thus disinhibiting hepatocyte ketogenesis, HCA/**carnitine** should initiate reverse electron transport: concurrent amplification of electron shuttle mechanisms by **pyruvate** can be expected to accelerate this reverse electron transport, thereby decreasing the electrochem. proton gradient. As a result, hepatocytes may be able to convert fatty acids to CO<sub>2</sub> and heat with little net generation of ATP. These considerations suggest that it may be feasible to render hepatocytes functionally equivalent to activated brown fat, such that stored fat can be selectively oxidized in the absence of caloric restriction. Other measures which enhance the efficiency of hepatocyte electron shuttle mechanisms may increase the efficacy of this strategy.
- ST review **pyruvate hydroxycitrate carnitine** lipolysis
- IT Lipids, biological studies  
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)  
 (lipolysis; **pyruvate** and **hydroxycitrate/carnitine** may synergize to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)
- IT Respiration, animal  
 (mitochondrial; **pyruvate** and **hydroxycitrate/carnitine** may synergize to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)
- IT Fatty acids, biological studies  
 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)  
 (oxidation; **pyruvate** and **hydroxycitrate/carnitine** may synergize to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)
- IT Antiobesity agents  
 (**pyruvate** and **hydroxycitrate/carnitine** may synergize to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)
- IT Drug interactions  
 (**synergistic; pyruvate** and **hydroxycitrate/carnitine** may synergize to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)
- IT Diet  
 (therapeutic; **pyruvate** and **hydroxycitrate/carnitine** may synergize to promote reverse electron

transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

IT 127-17-3, biological studies 541-15-1, Carnitine

27750-10-3, Hydroxycitric acid

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(pyruvate and hydroxycitrate/carnitine

may synergize to promote reverse electron transport in hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty acids)

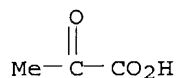
RE.CNT 97 THERE ARE 97 CITED REFERENCES AVAILABLE FOR THIS RECORD

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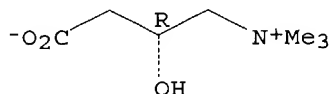


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- IT 127-17-3, biological studies 541-15-1, Carnitine  
 RL: BAC (Biological activity or effector, except adverse); BSU  
 (Biological study, unclassified); THU (Therapeutic use); BIOL  
 (Biological study); USES (Uses)  
 (pyruvate and hydroxycitrate/carnitine  
 may synergize to promote reverse electron transport in  
 hepatocyte mitochondria, effectively "uncoupling" the oxidation of fatty  
 acids)
- RN 127-17-3 HCAPLUS  
 CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



RN 541-15-1 HCAPLUS  
 CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L145 ANSWER 10 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1999:297312 HCAPLUS  
 DN 130:320858  
 ED Entered STN: 14 May 1999  
 TI Nutritional supplement for cerebral metabolic insufficiencies  
 IN Blass, John P.  
 PA Cornell Research Foundation, Inc., USA  
 SO PCT Int. Appl., 27 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM A61K031-70  
 ICS A61K031-715; A61K031-19  
 CC 1-11 (Pharmacology)  
 Section cross-reference(s): 63

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9921565	A1	19990506	WO 1998-US18120	19980901 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2306875	AA	19990506	CA 1998-2306875	19980901 <--
AU 9892139	A1	19990517	AU 1998-92139	19980901 <--
AU 760140	B2	20030508		
EP 1032403	A1	20000906	EP 1998-944644	19980901 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2001521002	T2	20011106	JP 2000-517723	19980901 <--
US 6537969	B1	20030325	US 2000-529091	20001020 <--
US 2003176365	A1	20030918	US 2003-379816	20030304 <--
PRAI US 1997-63165P	P	19971024	<--	
WO 1998-US18120	W	19980901	<--	
US 2000-529091	A1	20001020	<--	
AB	The present invention relates to a pharmaceutical composition which includes a sugar and a Krebs cycle intermediate, or salt thereof, or a precursor of a Krebs cycle intermediate. Krebs cycle intermediates include citric acid, aconitic acid, isocitric			

acid,  $\alpha$ -ketoglutaric, succinic acid, fumaric acid, malic acid, and oxaloacetic acid, and mixts. thereof. Precursors of **Krebs cycle** intermediates are compds. converted by the body to form a **Krebs cycle** intermediate. The present invention also relates to administration of the pharmaceutical composition to treat an individual for a disorder involving impaired mitochondrial function and to improve cerebral function in an individual having impaired cerebral metabolism

- ST nutritional supplement saccharide **Krebs cycle** intermediate; cerebral metabolic insufficiency glucose malate
- IT Nervous system  
(Huntington's chorea; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Glutamate antagonists  
(NMDA antagonists; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Antioxidants  
(as adjuvant; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Minerals, biological studies  
Vitamins  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(as adjuvant; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Heart, disease  
(cardiomyopathy; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Mental disorder  
(depression, neurotic; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Mental disorder  
(depression; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Cardiovascular system  
(disease; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Heart, disease  
(failure; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Mitochondria  
(function enhancement in; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Drug delivery systems  
(injections, i.m.; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Drug delivery systems  
(injections, i.v.; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)

- IT Drug delivery systems  
(injections, s.c.; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Brain, disease  
(insufficiency; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Drug delivery systems  
(mucosal; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Drug delivery systems  
(nasal; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Alzheimer's disease  
Atherosclerosis  
Musculoskeletal diseases  
Nutrients  
Parkinson's disease  
**Tricarboxylic acid cycle**  
(nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Disaccharides  
Monosaccharides  
Polysaccharides, biological studies  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Drug delivery systems  
(oral; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Drug delivery systems  
(parenterals; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Mental disorder  
(psychosis; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Drug delivery systems  
(solns., i.p.; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Nervous system  
(spinocerebellar ataxia; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT Heart, disease  
Heart, disease  
(valve; nutritional supplements containing sugars and **Krebs cycle** intermediates for improving impaired mitochondrial functions)
- IT 77-92-9D, Citric acid, esters  
110-15-6D, Succinic acid, esters  
110-17-8D, Fumaric acid, esters  
320-77-4D, Isocitric acid, esters

328-42-7D, Oxaloacetic acid, esters 328-50-7D,  
 $\alpha$  -Ketoglutaric acid, esters 499-12-7D,  
 Aconitic acid, esters 6915-15-7D, Malic acid, esters  
 RL: BAC (Biological activity or effector, except adverse); BSU  
 (Biological study, unclassified); THU (Therapeutic use); BIOL  
 (Biological study); USES (Uses)  
 (Krebs cycle intermediate precursor; nutritional  
 supplements containing sugars and Krebs cycle  
 intermediates for improving impaired mitochondrial functions)

IT 57-00-1, Creatine 59-43-8, Thiamine, biological  
 studies 59-67-6, Niacin, biological studies 65-23-6,  
 Pyridoxine 79-83-4, Pantothenic acid  
 83-88-5, Riboflavin, biological studies 541-15-1  
 , L-Carnitine  
 RL: BAC (Biological activity or effector, except adverse); BSU  
 (Biological study, unclassified); THU (Therapeutic use); BIOL  
 (Biological study); USES (Uses)  
 (as adjuvant; nutritional supplements containing sugars and Krebs  
 cycle intermediates for improving impaired mitochondrial  
 functions)

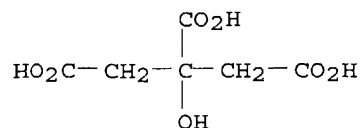
IT 9000-81-1, Acetylcholinesterase  
 RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (inhibitors; nutritional supplements containing sugars and Krebs  
 cycle intermediates for improving impaired mitochondrial  
 functions)

IT 50-99-7, Glucose, biological studies 56-84-8, L-Aspartic acid,  
 biological studies 57-48-7, Fructose, biological studies 57-50-1,  
 Sucrose, biological studies 59-23-4, Galactose, biological studies  
 63-42-3, Lactose 69-79-4, Maltose 77-92-9, Citric  
 acid, biological studies 110-15-6, Succinic  
 acid, biological studies 110-17-8, Fumaric  
 acid, biological studies 140-86-3 320-77-4,  
 Isocitric acid 328-42-7, Oxaloacetic  
 acid 328-50-7,  $\alpha$  -Ketoglutaric  
 acid 499-12-7, Aconitic acid 1518-62-3,  
 2,4-Dihydroxybutyric acid 3068-00-6, 1,2,4-Butanetriol 3458-28-4,  
 Mannose 6915-15-7, Malic acid 9005-25-8, Starch, biological  
 studies 22136-38-5, 2-keto-4-Hydroxybutyric acid  
 RL: BAC (Biological activity or effector, except adverse); BSU  
 (Biological study, unclassified); THU (Therapeutic use); BIOL  
 (Biological study); USES (Uses)  
 (nutritional supplements containing sugars and Krebs  
 cycle intermediates for improving impaired mitochondrial  
 functions)

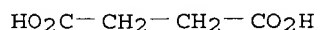
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 RE  
 (1) Umezawa; US 3963579 A 1976 HCAPLUS  
 (2) Yokota, K; Nippon Iyo Masu Supekutoru Gakkai Koenshu 1992, V17, P55 HCAPLUS

IT 77-92-9D, Citric acid, esters  
 110-15-6D, Succinic acid, esters  
 110-17-8D, Fumaric acid, esters  
 320-77-4D, Isocitric acid, esters  
 328-42-7D, Oxaloacetic acid, esters 328-50-7D,  
 $\alpha$  -Ketoglutaric acid, esters  
 RL: BAC (Biological activity or effector, except adverse); BSU  
 (Biological study, unclassified); THU (Therapeutic use); BIOL  
 (Biological study); USES (Uses)  
 (Krebs cycle intermediate precursor; nutritional  
 supplements containing sugars and Krebs cycle  
 intermediates for improving impaired mitochondrial functions)

RN 77-92-9 HCAPLUS  
 CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy- (9CI) (CA INDEX NAME)

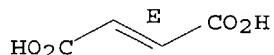


RN 110-15-6 HCAPLUS  
CN Butanedioic acid (9CI) (CA INDEX NAME)

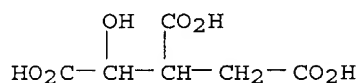


RN 110-17-8 HCAPLUS  
CN 2-Butenedioic acid (2E)- (9CI) (CA INDEX NAME)

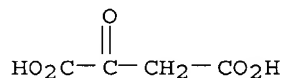
Double bond geometry as shown.



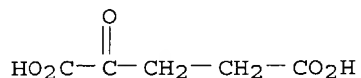
RN 320-77-4 HCAPLUS  
CN Pentaric acid, 3-carboxy-2,3-dideoxy- (9CI) (CA INDEX NAME)



RN 328-42-7 HCAPLUS  
CN Butanedioic acid, oxo- (9CI) (CA INDEX NAME)

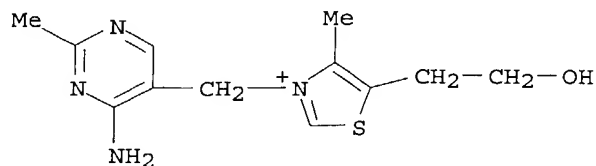


RN 328-50-7 HCAPLUS  
CN Pentanedioic acid, 2-oxo- (9CI) (CA INDEX NAME)



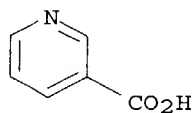
IT 59-43-8, Thiamine, biological studies 59-67-6,  
Niacin, biological studies 79-83-4, Pantothenic  
acid 83-88-5, Riboflavin, biological studies  
541-15-1, L-Carnitine  
RL: BAC (Biological activity or effector, except adverse); BSU  
(Biological study, unclassified); THU (Therapeutic use); BIOL  
(Biological study); USES (Uses)  
(as adjuvant; nutritional supplements containing sugars and Krebs  
cycle intermediates for improving impaired mitochondrial  
functions)  
RN 59-43-8 HCAPLUS  
CN Thiazolium, 3-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-5-(2-hydroxyethyl)-

4-methyl- chloride (9CI) (CA INDEX NAME)



RN 59-67-6 HCAPLUS

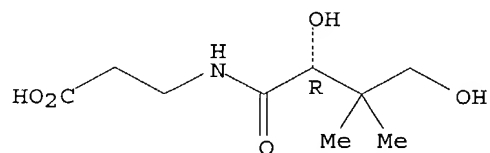
CN 3-Pyridinecarboxylic acid (9CI) (CA INDEX NAME)



RN 79-83-4 HCAPLUS

CN  $\beta$ -Alanine, N-[(2R)-2,4-dihydroxy-3,3-dimethyl-1-oxobutyl]- (9CI) (CA INDEX NAME)

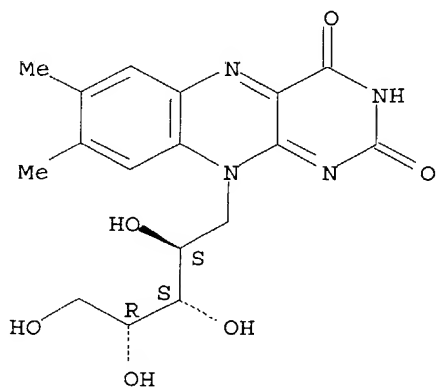
Absolute stereochemistry. Rotation (+).



RN 83-88-5 HCAPLUS

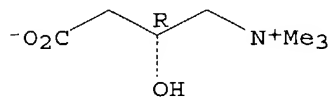
CN Riboflavin (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



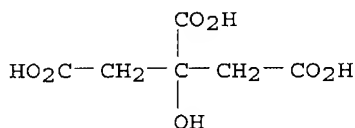
RN 541-15-1 HCAPLUS  
 CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)-  
 (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

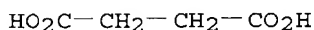


IT 77-92-9, Citric acid, biological studies  
 110-15-6, Succinic acid, biological studies  
 110-17-8, Fumaric acid, biological studies  
 320-77-4, Isocitric acid 328-42-7,  
 Oxaloacetic acid 328-50-7,  $\alpha$  -  
 Ketoglutaric acid  
 RL: BAC (Biological activity or effector, except adverse); BSU  
 (Biological study, unclassified); THU (Therapeutic use); BIOL  
 (Biological study); USES (Uses)  
 (nutritional supplements containing sugars and Krebs  
 cycle intermediates for improving impaired mitochondrial  
 functions)

RN 77-92-9 HCAPLUS  
 CN 1,2,3-Propanetricarboxylic acid, 2-hydroxy- (9CI) (CA INDEX NAME)

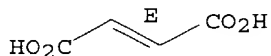


RN 110-15-6 HCAPLUS  
 CN Butanedioic acid (9CI) (CA INDEX NAME)

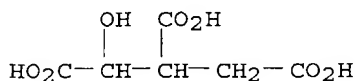


RN 110-17-8 HCAPLUS  
 CN 2-Butenedioic acid (2E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.

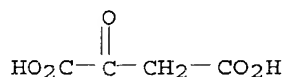


RN 320-77-4 HCAPLUS  
 CN Pentaric acid, 3-carboxy-2,3-dideoxy- (9CI) (CA INDEX NAME)

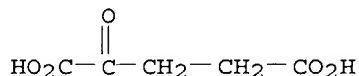


RN 328-42-7 HCAPLUS  
 CN Butanedioic acid, oxo- (9CI) (CA INDEX NAME)





RN 328-50-7 HCAPLUS  
 CN Pentanedioic acid, 2-oxo- (9CI) (CA INDEX NAME)



L145 ANSWER 11 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1999:70355 HCAPLUS  
 DN 130:129986  
 ED Entered STN: 02 Feb 1999  
 TI Compositions comprising **lysine** and **ascorbate** compounds  
 for the treatment and prevention of cardiovascular diseases  
 IN **Rath, Matthias**  
 PA Health Now, Inc., USA  
 SO Eur. Pat. Appl., 14 pp.  
 CODEN: EPXXDW  
 DT **Patent**  
 LA English  
 IC ICM A61K031-195  
 ICS A61K031-375  
 ICI A61K031-195, A61K031-375, A61K031-40, A61K031-59  
 CC 63-6 (Pharmaceuticals)  
 Section cross-reference(s): 1, 2

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 891771	A1	19990120	EP 1997-304994	19970708
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	EP 1068868	A2	20010117	EP 2000-115643	19970708
	EP 1068868	A3	20010131		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	NZ 509295	A	20021220	NZ 2001-509295	20010110
	HR 2001000023	A1	20020831	HR 2001-23	20010111
	HR 20010023	B1	20031231		
PRAI	EP 1997-304994	A	19970708		

AB A therapeutic **lysine**-based composition and methods for its use in the prevention and treatment of cardiovascular disease is disclosed. The composition includes at least one **lysine** compound such as **lysine**, **lysine** hydrochloride, **lysine** dihydrochloride, **lysine** orotate, **lysine** succinate, or **lysine** glutamate. The composition may also preferentially include **ascorbate**, proline and vitamin D or compds. thereof. The composition may also include N-acetylglucosamine and other compds. restoring and maintaining optimum biol. function of the vascular wall. A patient at risk of developing or with a pre-existing cardiovascular disease is treated by administering orally or parenterally a desired dosage of the composition on a daily basis.

ST **lysine** antiatherosclerotic **ascorbate** cardiovascular disease

IT Lipoproteins

RL: ADV (Adverse effect, including toxicity); BOC (Biological occurrence);  
 BSU (Biological study, unclassified); BIOL (Biological study); OCCU

(Occurrence)

(Lp(a); **lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)

IT Antiarteriosclerotics

(antiatherosclerotics; **lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)

IT Drug delivery systems

(carriers; **lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)

IT Cardiovascular system

(disease; **lysine** and **ascorbate** compds. for the treatment and prevention of cardiovascular diseases)IT 50-81-7, **Ascorbic acid**, biological studies56-87-1, **Lysine**, biological studies 60-32-2, $\epsilon$ -Aminocaproic acid 67-97-0, Cholecalciferol 147-85-3,Proline, biological studies 657-26-1, **Lysine**dihydrochloride 657-27-2, **Lysine** hydrochloride

1197-18-8, Tranexamic acid 1406-16-2, Vitamin d 5408-52-6,

**Lysine** glutamate 7512-17-6, N-Acetylglucosamine 7776-34-3,Proline hydrochloride 12001-76-2, Vitamin B 18841-57-1, **Lysine**

orotate 29324-94-5 32511-63-0, 1,25-Dihydroxyvitamin d3 219942-03-7

219942-06-0 219942-08-2

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(lysine and ascorbate compds. for the treatment and prevention of cardiovascular diseases)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Eisai Kk; JP 60087221 A 1985 HCAPLUS

(2) Rath, M; US 5278189 A HCAPLUS

(3) Rath, M; US 5650418 A HCAPLUS

(4) Rath, M; WO 9119488 A HCAPLUS

(5) Rath, M; Journal of Applied Nutrition 1996, V48/3(68-78)

IT 50-81-7, **Ascorbic acid**, biological studies56-87-1, **Lysine**, biological studies 657-26-1,**Lysine** dihydrochloride 657-27-2, **Lysine** hydrochloride

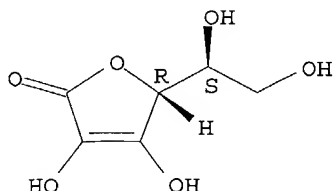
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(lysine and ascorbate compds. for the treatment and prevention of cardiovascular diseases)

RN 50-81-7 HCAPLUS

CN L-Ascorbic acid (8CI, 9CI) (CA INDEX NAME)

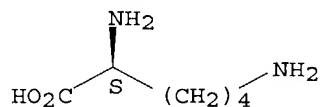
Absolute stereochemistry.



RN 56-87-1 HCAPLUS

CN L-Lysine (9CI) (CA INDEX NAME)

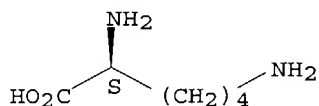
Absolute stereochemistry.



RN 657-26-1 HCAPLUS

CN L-Lysine, dihydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.

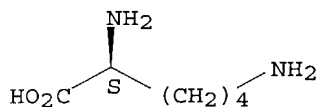


● 2 HCl

RN 657-27-2 HCAPLUS

CN L-Lysine, monohydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.



● HCl

L145 ANSWER 12 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1997:576691 HCAPLUS

DN 127:243272

ED Entered STN: 10 Sep 1997

TI Method and **composition** using purines and other compounds for inhibiting cellular irreversible changes due to stress

IN Miller, Guy; Lou, Lillian; Nakamura, John

PA Galileo Laboratories, Inc., USA

SO PCT Int. Appl., 31 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM A61K031-70

ICS C07H019-16; C07H019-20

CC 1-12 (**Pharmacology**)

Section cross-reference(s): 63

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9730713	A1	19970828	WO 1997-US2945	19970220 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR,				

IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML,  
MR, NE, SN, TD, TG

US 5801159	A	19980901	US 1996-607022	19960223 <--
CA 2247461	AA	19970828	CA 1997-2247461	19970220 <--
AU 9719749	A1	19970910	AU 1997-19749	19970220 <--
EP 935466	A1	19990818	EP 1997-907855	19970220 <--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, FI

JP 2000506834	T2	20000606	JP 1997-530408	19970220 <--
NO 9803823	A	19981001	NO 1998-3823	19980820 <--

PRAI US 1996-607022 19960223 <--  
WO 1997-US2945 19970220 <--

OS MARPAT 127:243272

AB **Formulations** of naturally occurring physiol. acceptable compds. and their derivs. are provided for treatment of cellular stress, particularly hypoxia. By administering the **formulations**, comprising for the most part purines, sugars, amino acids and physiol. acceptable derivs. thereof, by themselves or in **combination** with each other and with other compds., particularly electron acceptor compds., the time to irreversible cellular changes, particularly mortality, can be greatly extended.

ST purine sugar cytoprotectant cell stress; amino acid cytoprotectant cell stress; electron acceptor cytoprotectant cell stress

IT Diet  
(and dietary supplement; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Food  
(and food bars; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Carboxylic acids, biological studies  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(hydroxy; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Stress, animal  
(hypoxic; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Carboxylic acids, biological studies  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(oxo; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Animal tissue  
Animal tissue culture  
Beverages  
Cytoprotective agents  
Drug delivery systems  
Electron acceptors  
**Glycolysis**  
Hypoxia, animal  
Organ, animal  
Stress, animal  
Transplant and Transplantation  
(purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT Amino acids, biological studies  
Dipeptides  
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(purines and other compds. for inhibition of cellular irreversible

changes due to stress)

IT Carbohydrates, biological studies

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(reducing sugars; purines and other compds. for inhibition of cellular irreversible changes due to stress)

IT 50-44-2, 6-Mercaptopurine 50-89-5, Thymidine, biological studies  
50-99-7, D-Glucose, biological studies **53-84-9**, NAD 56-40-6,  
Glycine, biological studies 56-41-7, Alanine, biological studies  
56-45-1, Serine, biological studies **56-65-5**, **Adenosine**  
**triphosphate**, biological studies 56-85-9, Glutamine, biological  
studies 56-86-0, L-Glutamic acid, biological studies **56-87-1**,  
L-**Lysine**, biological studies 57-48-7, Fructose, biological  
studies 58-55-9, Theophylline, biological studies 58-61-7, Adenosine,  
biological studies 58-63-9, Inosine **58-64-0**, **Adenosine**  
**diphosphate**, biological studies 59-23-4, Galactose, biological  
studies 61-19-8, 5'-Adenylic acid, biological studies 61-73-4,  
Methylene blue 63-91-2, L-Phenylalanine, biological studies 65-86-1,  
Orotic acid 68-41-7, Cycloserine 71-30-7, Cytosine 73-03-0,  
Cordycepin 73-22-3, Tryptophan, biological studies 74-79-3, Arginine,  
biological studies 84-21-9, 3'-Adenosine monophosphate 85-31-4,  
6-Mercaptoguanosine 107-35-7, Taurine 107-97-1, Sarcosine 118-00-3,  
Guanosine, biological studies 120-73-0D, Purine, derivs.  
**127-17-3**, **Pyruvic acid**, biological studies  
131-99-7, 5'-Inosinic acid 146-80-5, Xanthosine 300-85-6  
**328-50-7**,  $\alpha$ -**Ketoglutaric acid**  
488-69-7, Fructose-1,6-diphosphate 541-50-4, Acetoacetic acid,  
biological studies 551-84-8, Xylulose 574-25-4, 6-Mercaptopurine  
riboside 598-41-4, Glycine amide 600-18-0,  $\alpha$ -Ketobutyric acid  
616-34-2, Glycine methyl ester 643-13-0, Fructose-6-phosphate  
653-63-4, 2'-Deoxyadenosine monophosphate 820-11-1, 3-Phosphoglyceric  
acid 890-38-0, Deoxyinosine 892-48-8, 5'-Chloro-5'-deoxyadenosine  
902-04-5 958-09-8, Deoxyadenosine 961-07-9, Deoxyguanosine  
1053-73-2, 3',5'-**Adenosine diphosphate** 1113-60-6,  
 $\beta$ -**Hydroxypyruvic acid** 1118-68-9, N,N-Dimethylglycine  
2002-28-0, Ribulose-1,5-diphosphate 2004-07-1, 2-Amino-6-chloropurine  
riboside 2140-73-0, 1-Methylinosine 2140-77-4 2140-79-6,  
2'-O-Methyladenosine 2239-64-7 2304-12-3, Adenosine 5'-monosulfate  
2457-80-9, 5'-Deoxy-5'-methylthioadenosine 3393-18-8 3458-28-4,  
Mannose 3805-37-6, 2',5'-**Adenosine diphosphate**  
4431-00-9, Aurintricarboxylic acid 4546-70-7 4754-39-6,  
5'-Deoxyadenosine 5399-87-1, 6-Chloropurine riboside 5556-48-9,  
Ribulose 5682-25-7,  $\alpha$ -Adenosine 6915-15-7, **Malic acid**  
10065-72-2, Alanine methyl ester 10139-18-1, Glucose-1,6-diphosphate  
14365-44-7, 5'-Amino-5'-deoxyadenosine 20245-33-4, 7-Methylinosine  
20762-30-5, Adenosine 5'-diphosphoribose 24280-93-1, Mycophenolic acid  
24386-93-4, 5-Iodotubercidin 27025-41-8, Oxidized glutathione  
29884-64-8, Threose 29886-19-9, 2', 3'-Di-O-acetyladenosine  
32266-35-6, Dibutyryl cyclic GMP 35899-54-8 38048-32-7,  
S-4-Nitrobenzyl-6-thioinosine 41552-82-3, N6-Cyclopentyladenosine  
51350-19-7, erythro-9-(2-Hydroxy-3-nonyl)adenine 53296-10-9,  
2-Phenylaminoadenosine 56964-73-9 79082-92-1, Fructose-2,6-diphosphate  
102029-71-0, Adenosine 5'-**succinate** 195503-37-8  
RL: BAC (Biological activity or effector, except adverse); BSU  
(Biological study, unclassified); THU (Therapeutic use); BIOL  
(Biological study); USES (Uses)  
(purines and other compds. for inhibition of cellular irreversible  
changes due to stress)

IT **53-84-9**, NAD **56-65-5**, **Adenosine**  
**triphosphate**, biological studies **56-87-1**, L-  
**Lysine**, biological studies **58-64-0**, **Adenosine**  
**diphosphate**, biological studies **127-17-3**,

Pyruvic acid, biological studies 328-50-7,

$\alpha$  -Ketoglutaric acid

RL: BAC (Biological activity or effector, except adverse); BSU

(Biological study, unclassified); THU (Therapeutic use); BIOL

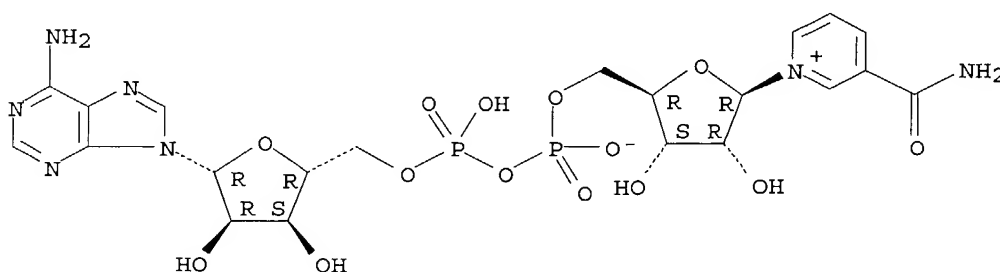
(Biological study); USES (Uses)

(purines and other compds. for inhibition of cellular irreversible changes due to stress)

RN 53-84-9 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate), P' $\rightarrow$ 5'-ester with  
3-(aminocarbonyl)-1- $\beta$ -D-ribofuranosylpyridinium, inner salt (9CI)  
(CA INDEX NAME)

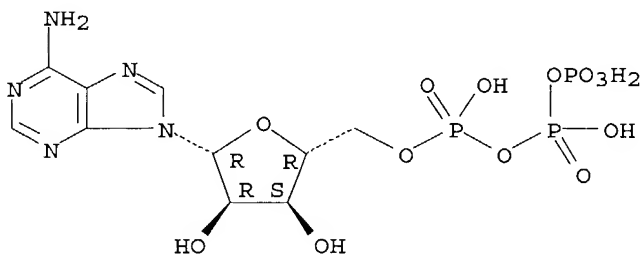
Absolute stereochemistry.



RN 56-65-5 HCAPLUS

CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

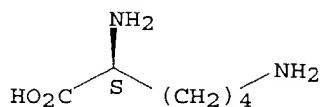
Absolute stereochemistry.



RN 56-87-1 HCAPLUS

CN L-Lysine (9CI) (CA INDEX NAME)

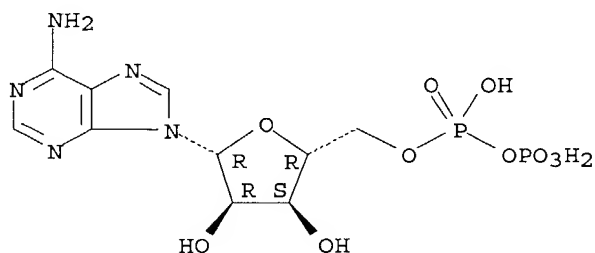
Absolute stereochemistry.



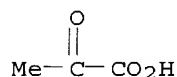
RN 58-64-0 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate) (9CI) (CA INDEX NAME)

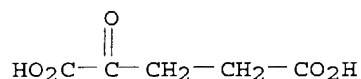
Absolute stereochemistry.



RN 127-17-3 HCAPLUS  
 CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



RN 328-50-7 HCAPLUS  
 CN Pentanedioic acid, 2-oxo- (9CI) (CA INDEX NAME)



L145 ANSWER 13 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1997:132781 HCAPLUS

DN 126:139892

ED Entered STN: 28 Feb 1997

TI Processes, compounds, and compositions for augmented ATP production, and therapeutic and other uses

IN Fahy, Gregory M.

PA Organ, Inc., USA; Life Resuscitation Technologies, Inc.

SO PCT Int. Appl., 43 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM A61K031-70

ICS A61K031-115

CC 1-10 (Pharmacology)

Section cross-reference(s): 9, 13, 18, 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9640167	A1	19961219	WO 1996-US10255	19960607 <--
	W: AU, CA, CN, JP, KR, SG				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5707971	A	19980113	US 1995-476035	19950607 <--
	CA 2223327	AA	19961219	CA 1996-2223327	19960607 <--
	AU 9661754	A1	19961230	AU 1996-61754	19960607 <--
	EP 831853	A1	19980401	EP 1996-919403	19960607 <--
	R: BE, CH, DE, ES, FR, GB, IT, LI, NL, SE, IE				
PRAI	US 1995-476035				19950607 <--
	WO 1996-US10255				19960607 <--
AB	Delivery of fuel and cofactors augments ATP production in cells, and mitigates damages in ischemic or metabolically impaired tissues. The processes may				

be particularly effective in acute or chronic ischemic conditions, for reversing anesthesia, for treating diabetes, for producing or preventing coma due to lack of fuel of ATP, for reversing processes of aging, as dietary supplements, as performance enhancers (e.g. for sports), for tissue transplantation and other surgery, and for cold storage or cryopreservation of tissues such as organs. Compds. disclosed include NAD<sup>+</sup>, CoA, **acetyl CoA**, glyceraldehyde-3-phosphate, etc.

- ST ATP augmentation ischemia diabetes anesthesia reversal; diet supplement pharmaceutical ATP augmentation; aging athletic performance enhancer ATP augmentation; transplantation surgery cryopreservation ATP augmentation; oxidative metab impairment ATP augmentation; NAD CoA **acetyl CoA** ATP augmentation; glyceraldehyde phosphate ATP augmentation
- IT Antidiabetic agents
  - Blood products
  - Cytoprotective agents
  - Drug delivery systems
  - Exercise
  - Hypothermia
  - Hypoxia, animal
  - Ischemia
  - Surgery
  - Transplant and Transplantation
    - (ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)
- IT Exercise
  - (athletic performance; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)
- IT Drug delivery systems
  - (controlled-release; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)
- IT Organ preservation
  - (cryopreservation; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)
- IT Hypoglycemia
  - (death associated with; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)
- IT Coma
  - (diabetic; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)
- IT Death
  - (hypoglycemia-associated; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)
- IT Drug delivery systems
  - (oral; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)
- IT **Metabolism**
  - (oxidative, tissue with impaired; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)
- IT Aging, animal
  - (reversal of processes of; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)
- IT Anesthesia
  - (reversal; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)
- IT Kidney
  - (slices, cold storage; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)
- IT Diet
  - (supplements; ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)
- IT 53-84-9, NAD 72-89-9, **Acetyl CoA**  
79-43-6, Dichloroacetic acid, biological studies 85-61-0, CoA,



biological studies 127-17-3, biological studies 138-08-9,  
Phosphoenol pyruvic acid 138-81-8,  
2,3-Diphosphoglyceric acid 488-69-7, Fructose-1,6-bisphosphate  
541-15-1, Carnitine 591-59-3, Glyceraldehyde-3-  
phosphate 820-11-1, 3-Phosphoglyceric acid 14992-62-2, Acetyl  
carnitine

RL: BAC (Biological activity or effector, except adverse); BSU  
(Biological study, unclassified); BUU (Biological use, unclassified);  
THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(ATP augmentation processes, compds., and compns., and  
therapeutic and other uses)

IT 56-65-5, biological studies

RL: BPR (Biological process); BSU (Biological study, unclassified); MFM  
(Metabolic formation); BIOL (Biological study); FORM (Formation,  
nonpreparative); PROC (Process)  
(ATP augmentation processes, compds., and compns., and  
therapeutic and other uses)

IT 7782-44-7, Oxygen, biological studies

RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL  
(Biological study); PROC (Process)  
(deficit; ATP augmentation processes, compds., and compns.,  
and therapeutic and other uses)

IT 50-99-7, D-Glucose, biological studies

RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL  
(Biological study); PROC (Process)  
(metabolism, defect; ATP augmentation processes, compds., and  
compns., and therapeutic and other uses)

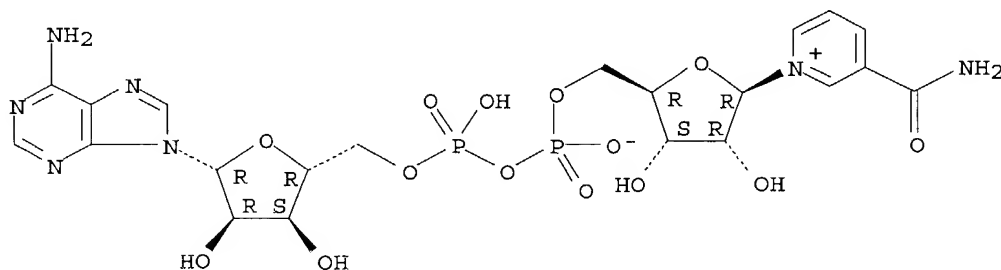
IT 53-84-9, NAD 72-89-9, Acetyl CoA

127-17-3, biological studies 541-15-1, Carnitine  
RL: BAC (Biological activity or effector, except adverse); BSU  
(Biological study, unclassified); BUU (Biological use, unclassified);  
THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(ATP augmentation processes, compds., and compns., and  
therapeutic and other uses)

RN 53-84-9 HCAPLUS

CN Adenosine 5'-(trihydrogen diphosphate), P'→5'-ester with  
3-(aminocarbonyl)-1-β-D-ribofuranosylpyridinium, inner salt (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.

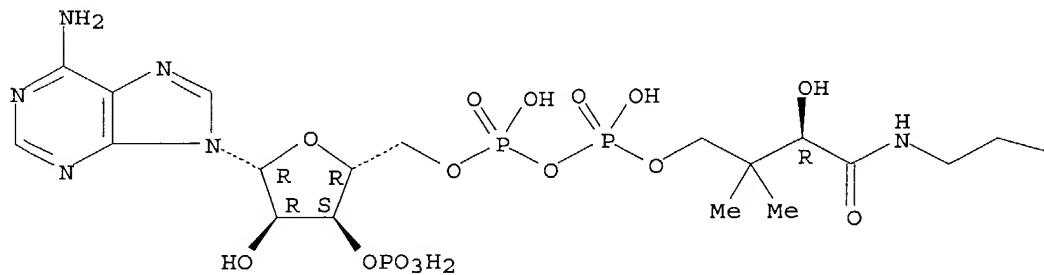


RN 72-89-9 HCAPLUS

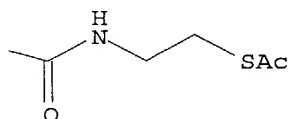
CN Coenzyme A, S-acetate (6CI, 8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.

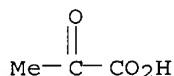
PAGE 1-A



PAGE 1-B

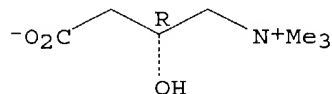


RN 127-17-3 HCAPLUS  
 CN Propanoic acid, 2-oxo- (9CI) (CA INDEX NAME)



RN 541-15-1 HCAPLUS  
 CN 1-Propanaminium, 3-carboxy-2-hydroxy-N,N,N-trimethyl-, inner salt, (2R)- (9CI) (CA INDEX NAME)

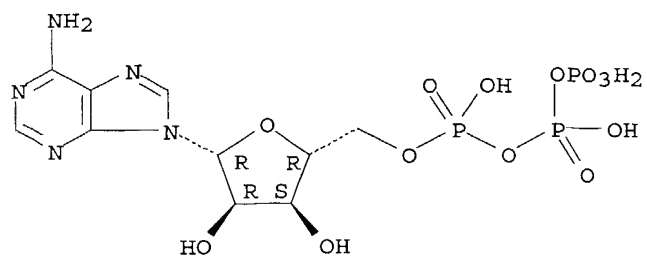
Absolute stereochemistry. Rotation (-).



IT 56-65-5, biological studies  
 RL: BPR (Biological process); BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative); PROC (Process)  
 (ATP augmentation processes, compds., and **compns.**, and therapeutic and other uses)

RN 56-65-5 HCAPLUS  
 CN Adenosine 5'-(tetrahydrogen triphosphate) (8CI, 9CI) (CA INDEX NAME)

Absolute stereochemistry.



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